REPORT

ON THE WORKING OF THE

DEPARTMENT OF AGRICULTURE

DURING

OCTOBER 1938 TO SEPTEMBER 1946

AND THE

AGRICULTURAL YEAR 1946-47.

Published by Authority

MALTA
GOVERNMENT PRINTING OFFICE

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SOME WEIGHTS AND MEASURES
MALTESE AND ENGLISH EQUIVALENTS

	Maltese		English
1. Weights			
	1 rotolo	—	1.75 lbs
	1 Qantar (100 rotoli)	—	175 lbs
	1,280 rotoli	—	1 ton
2. Measures			
(a) Wine	1 barile	—	9.50 gallons
(b) Land	1 tumolo	—	0.27 acres
	(a tumolo is a square having each side 110 ft long)		
	3.6 tumoli	—	1 acre
	1 salma (16 tumoli)	—	4.4 acres
(c) Volume	1 salma (16 tumoli) 96 mondelli)	—	64 gallons or 1 quarter

NOTE :—For sulla and straw, in Malta 1 soma is a load of 10 bundles. In Gozo, 1 soma is a load of 8 bundles, but the weight per load is roughly the same as in Malta.

Agric. 563/47.

15th October, 1948.

Hon. M. of I.
Hon. M. H. & S. S.

I have the honour to transmit herewith a Report on the working of the Department of Agriculture during the period October, 1938 to September, 1946 and the Agricultural Year October 1946 to September 1947.

2. The last Report was published in 1938 and I had to collate material and recount facts, for the period above-mentioned, since my return to the Department in July 1944 after an absence of two years on War Duty. During this period Mr H. Hirst, M. Sc. Dip. Agric. (Cantab), acted as Director of Agriculture.

3. It will be appreciated that in winding up the various emergency schemes and in paving the way for a sane post-war agricultural policy little time was left for me to write this Report which, therefore, has been unavoidably delayed.

R. Biasini.
Director of Agriculture.

MALTA.

Report by the Director of Agriculture covering activities of the Department during the period October 1938 to September 1946 and the Agricultural year October 1946 to September 1947.

1. Introductory.

(1) The unsettled state of world affairs existing in 1938 showed definite signs of rapid deterioration when, early in 1939, the Department was called upon to take stock of its activities and of agriculture in general with a view "to consider the methods which should be adopted to produce locally as much foodstuffs as possible" in the event of an outbreak of hostilities.

(2) It was recognised that the possibility of increasing the acreage of land under cultivation was limited. The conversion of dry into irrigated land raised a problem closely connected with the supply of potable water so that in the absence of major costly irrigation schemes, reliance had to be placed on the land which was already being irrigated. The area of such land represented a very small percentage ($4\frac{1}{2}$) of the 46,000 acres of land under cultivation.

2. Outbreak of Hostilities.

When war broke out in September 1939, the crop and livestock position was agreably on the credit side. There was a self-sufficiency in the 25,000 pigs which were being bred annually; the state of fertility of the soil was rich through the local fattening of about 14,000 head of store cattle imported annually; stocks of fodder were quite adequate. However, it soon became abundantly clear, that every effort should be made to concentrate on local resources.

3. Initial war activities.

In its first war effort, the Department devoted its attention to the water problem, the utilisation of all cultivable public lands, the extension of the Rent Restriction Ordinance to rural property, the reclamation of derelict land, the compulsory immunisation of breeding stock against swine erysipelas and the prohibiting of the slaughter of breeding and immature stock. The cultivation of tobacco was prohibited as a matter of course thus releasing about 40 acres of land for the cultivation of crops for human and animal consumption and in order to anticipate the tendency, experienced during the First World War, to fell trees for firewood, no person was allowed to destroy or damage trees without the permission of the Director of Agriculture.

4. Broadcast Talks.

These various measures which contained many ideas which were new to the innate conservatism of the farmer required careful handling in their presentation to the farming community. The spreading of rumours gathers force during war-time and it was therefore necessary that the farmer who was mostly illiterate should have been able to hear directly what the Department had to tell him. For this purpose, half-hour Sunday morning broadcasts to farmers over the Rediffusion System were arranged, in March 1939, in consultation with the Information Officer. These talks later included a reference to the progress of the war thus enabling the farmer to realise the gravity of the situation and, at the same time, the impellent necessity of accepting whatever controls or restrictions which were being imposed on him by the Government. As public loudspeakers were installed in many village squares, these talks attracted a group of farmers every Sunday morning and these, in turn, were able to pass on, by word of mouth, the information which they had collected. It was most unfortunate that, owing to loss at sea of supplies of material, Rediffusion was lacking in some of the larger agricultural districts. This difficulty was partly overcome, in 1941, by providing an Amplifier Van to carry information into the villages not served by Rediffusion.

5. First signs of blockade.

The first signs of blockade had already set in becoming increasingly acute as time wore on. In 1939 imports of cattle was reduced by one half and by June 1940, with the entry of Italy into the war, importations ceased completely. The livestock industry which was and still is mainly dependent on imported fodder, required annually about 58,000 tons of concentrates composed mostly of beans, barley, maize, chickpeas and dariseed. With shipping difficulties in the Mediterranean aggravated by attacks from the air, it was realized that whatever livestock was to survive had to rely eventually on locally grown fodder.

6. War Measures — June-December 1940.

The following war measures were adopted during the second half of 1940, when, the Director of Agriculture, for the first time, exercised the powers of a "Competent Authority" conferred on him under Regulation 50 of the Malta Defence Regulations, 1939, viz :—

(a) A census of the animal population was taken (Order No. 1 of the 12th January, 1940) ;

(b) By Order No. 2 of the 19th July, 1940, retailers were made to declare weekly their stocks of animal feeding stuffs ;

(c) Slaughter control of breeding stock was introduced for the purpose of conserving, as long as possible, the fresh milk supply and, also of providing a limited quantity of fresh beef ;

(d) Distributed imported fodder in short supply direct to the producer in order to ensure equitable distribution and to prevent hoarding ;

(e) Established a Rabbitry at the Government Farm with a free stud service of Flemish Giant bucks. The importance of this measure was much appreciated during the siege period when rabbits formed a valuable source of fresh meat supplies ;

(f) Utilised surplus first class water at the Government Farm for the production of additional fodder for sale to farmers ;

(g) Sold surplus water to farmers at nominal rates as an encouragement to raise more agricultural produce ;

(h) Distributed seeds from the Government Farm, free of charge ;

(i) Undertook the growing of vegetables and fodder in public gardens and on public sites.

(j) Imported and distributed sprays and fertilisers in order to ensure that an adequate supply be made available to farmers at a fair price.

7. Fodder Rationing.

Early in 1941, what were considered to be mild air attacks on the Island by the Italian Air Force developed into terrific bombardments from the air when Kesselring's Armada moved into Sicily. The attack on "H.M.S. Illustrious" in the Grand Harbour made it obvious that supplies of fodder from abroad would be difficult to obtain if at all and, therefore, it became imperative to introduce a rationing system to conserve available stocks. A fodder rationing scheme for livestock was introduced by the Department on the 1st March 1941 following the collection of data on livestock population by virtue of Orders No. 4 and 5 of the 7th January, 1941. At the same time, increased facilities for the serving of cows, ewes and does were introduced at the Government Farm, with a view to an intensive substitution of quantity by quality.

8. Potato Bread Scheme.

A successful crop of spring potatoes was obtained from the 2,600 tons seed potatoes imported in January 1941. It was estimated that between three to four thousand tons were surplus to local requirements. Such surplus was normally exported but, it will be appreciated, that, with conditions worsening every day, no one was in the mood of parting with any kind of food. It became necessary, therefore, to devise ways and means to utilize such surplus to the best advantage. The Department provided free skilled labour for fumigating any moth-infested potatoes in storage. An inducement to store potatoes was given, also, by fixing prices on a rising scale from June to October. Such price fixing, moreover, had in view the retention of a reasonable price to the producer which otherwise would have discouraged future plantings.

Moreover, in order to minimise the effects of the existing glut, a system was introduced by which potato puree was incorporated in bread-making. An added advantage of this system was the saving of flour. The War Department also helped in reducing the glut by increasing the daily ration of potatoes from ten to fourteen ounces and by baking potato bread which became known as "wheatato". Bakers were not particularly impressed with the system as it involved extra labour in preparing the potato puree. The Department, as sponsor of the scheme, had to carry out demonstrations in bakeries often in the face of severe opposition. The services of the Master Baker of the Corradino Civil Prisons were particularly appreciated. Persuasion was resorted to, in the first instance, and it was made lawful for bakers to incorporate not more than 30% by weight of cooked peeled potatoes in the dry mixture used in the manufacture of all kinds of bread (Government Notice No. 327 of the 5th July, 1941). However, as a minority of bakers were not amenable to persuasion, by Government Notice No. 344 of the 22nd July, 1941, it was made compulsory for bakers to incorporate not less than 20% of cooked peeled potatoes in their bread mixture and added further penalties in default. Such restriction on bakers was removed by Government Notice No. 439 of the 19th September, 1941. The scheme was in operation for 50 days — 1,000 tons of potatoes were used in this manner and 1,000 tons of flour from our depleting stocks were saved.

9. Agricultural Leases (Restriction of Rent) Regulations, 1941.

By June 1941 there seemed to be very limited possibilities of further expansion of cultivated land — the petrol shortage excluded the possibility of extending irrigation — it only remained to concentrate on the full use of arable land already under cultivation. In order to give to the producer a measure of security of tenure and of protection against undue increase in rent, consequent on improvements of the land in this supreme effort, the Agricultural Leases (Restriction of Rent) Emergency Regulations, 1941 (Government Notice No. 336 of the 11th July, 1941) were introduced. These regulations were amended by Government Notices No. 349 of the 25th July, 1941, No. 242 of the 18th May, 1943, and No. 261 of the 24th May, 1943. A Board, whose proceedings are summary and its findings are final, was set up to deal with applications from tenants resisting eviction or unwarranted increases in rent. The Board was composed of the Director of Agriculture, as Chairman, assisted by a Legal Adviser and by a Civil Engineer. The Agricultural Leases Regulations are still in force and from 1943 to 1947 the Board held 53 sittings and considered 355 applications. The Board allowed a reasonable increase in rent in 142 cases; refused an increase in rent in 5 cases; refused eviction in 40 cases; allowed eviction in 26 cases; did not take cognisance of 13 cases, according to law; a compromise was reached in 118 cases and 11 cases were left sine die. Unfortunately records for the years 1941 and 1942 have been lost through enemy action.

10. Tightening up controls.

Apart from the measures mentioned so far, the Department continued to deal, during 1941, with a succession of activities dictated by the exigencies of the moment. By Government Notice No. 82 of the 7th March, 1941, the provisions of the Tobacco Growing (Control of) Ordinance, 1939, were extended to include the keeping, disposing, acquiring and taking part in the manufacture of locally grown tobacco. Heavier penalties for contravening this law were introduced. Dwindling stocks of dariseed called for the rationing of this commodity and a registration of poultry and rabbits was made by Order No. 7 of the 23rd April. Moreover, Order No. 9 of the 11th June, 1941, established the rationing of wheat offal as from the 14th June, 1941, from which date the purchase of bran and pollard was prohibited except on the production of a ration card. In order to ensure, for rationing purposes, that an accurate record be kept on the movement of livestock, owners were directed to report, within forty eight hours, any changes in their livestock figures (Order No. 10 of the 29th July, 1941, repealing Order No. 5 of the 9th January, 1941).

11. Sulphur shortage.

Powdered flowers of sulphur is extensively used in the dusting of the grape, tomato and melon crops. The stock position of this commodity was rendered precarious through the drying up of our only source of supply following Italy's entry into the War on the side of Germany. It may sound ironical that the same mines from which

sulphur was obtained by us were to be flooded by the retreating Germans during the Allied invasion of Sicily which sprung tempestously from our shores at a later date. The fact remained, however, that during the summer of 1941, the stock of sulphur was reduced to four tons. It was taken over by the Department and mixed with an equal quantity of inert powder. Without diminishing the efficacy of the dust the available quantity was doubled and a scanty but equitable distribution was assured. Chalk and lime were used as a filler. Steps were taken to secure from the United Kingdom an adequate stock of sulphate of copper widely used in the Bordeaux mixture for the spraying of potatoes.

12. **Public Gardens under War conditions.**

The profusion of flowers and ornamental trees for which our Public Gardens were noted in the past had to give way to the more practical necessities of life brought about by the war. Fuel had become scarcer and, therefore, a systematic pruning and uprooting of trees, which normally was not carried out or was spread over a number of years, had to be resorted to in order to increase dwindling stocks of firewood. The growing of flowers was substituted by vegetables, for human consumption and for seed, and by the growing of green fodder. Varieties were grown according to the nature of the land and to the skilled labour available. In view of the increasing difficulty of obtaining supplies from the normal channels, the Public Gardens were especially entrusted with the production of seed crops.

13. **Wheat Crisis — July 1941.**

The fall of Crete in June 1941 gave rise to many apprehensions. One of the most disquieting factors concerned the wheat supply and, in order to meet possible eventualities, it was decided to take stock of the standing crop of wheat and of any which had already been harvested, with a view to immediate requisitioning for general use. It was anticipated that the tonnage which would be collected represented between four to six weeks consumption of flour by the local population. Plans were worked out to purchase the local crop of wheat. Farmers were required to register their acreage under wheat (Government Notice No. 350 of the 25th July 1941) and were forbidden to sell it except under permit by the Director of Agriculture. As imported wheat was being subsidised by the Imperial Government the same price was offered to the farmer as an inducement. However, the whole scheme was dropped owing to the timely arrival of wheat supply ships but it portrayed a scene in the dress rehearsal of the drama which was to be enacted in 1942.

14. **Stone from demolished buildings.**

Farmsteads and retaining walls which had been blitzed required immediate attention and, in order to carry on as usual, it was essential that they should be rebuilt. Suitable stone obtained from buildings demolised by enemy action was sold to farmers at 2½d per cubic foot.

15. **The Government Farm.**

During 1941, the fullest use was continued to be made of the facilities offered by the various sections of the Government Farm such as:—

Forage Crops. To help livestock owners, stocks of green lucerne and mangold wurzels were sold at 2/6 per qantar. The policy of putting down a large proportion of available land under lucerne was amply justified. About 1,500 cwts. of this forage crop was sold every month and it was possible to expand production by the diversion of sewage water on to forage crops.

Tomato and globe artichoke plants. To meet an exceptional demand for tomato plants 10 lbs. of seed flown from Egypt which, with available stocks, were sown in beds at the Government Farm from where at least a million plants were sold at a nominal charge of 6d per 100 plants. Globe artichoke plants at 3d per dozen plants were also available for sale.

Other crops. It was also possible to place on sale to the public selected onions, water melons (white fleshed)) and sugar melons at reasonable prices.

Seeds. Various vegetable seeds, mainly beet, carrot and Savoy cabbage, were imported from Egypt for sale to farmers and gardeners. This service proved to be especially acceptable to farmers whose requirements were usually met by pitkali importers.

Dairy. Once again large seasonal consignment of surplus pasteurized goat's milk was received from the Milk Marketing Undertaking for conversion into cheese and butter. About 15,000 rotoli of hard pressed cheese and some thousands rotoli of butter were processed during the 1941 season. The surplus whey from cheese making was offered free to pig owners.

Bacon industry. The curing of bacon which was carried out experimentally at the Government Farm proved successful. It was possible by the middle of 1941 to produce about 10 tons of bacon and ham monthly, which formed a welcome change in the daily diet. However, lack of cold storage facilities and the increasing price of pork led to the abandonment of the project later in the year.

Rabbit-breeding. The establishment of the free service scheme from Flemish Giant bucks proved eminently successful. Thousands of services were performed since the inception of the scheme which encouraged the Department to extend such facilities. Moreover, in order to intensify the breeding of rabbits, accommodation was provided for 100 does.

16. Food production at the Marsa Sports Ground.

Hardly anyone would have realized before war broke out that the golf course, polo grounds, racing track and cricket pitches of the Marsa Sports Grounds would soon be turned into arable land producing crops of vital necessity to the Island. But the miracle happened. Ploughing tractors were put on the job, seed was broadcast and the first harvest was keenly awaited. Work which was initiated by a private contractor in 1940 was later handed over to the care of personnel from the Government Farm. It is a pleasure to place on record that additional production of foodstuffs was effected on this land covering an area of 150 acres. Land already ploughed was sown with potatoes (followed by a summer crop of melons) and with wheat. Further land was cleared of waste grass (sold to a local dairy) and after ploughing sown with forage maize. Other land had a crop of hay taken and was ploughed ready for the autumn sowing of potatoes. Two abandoned wells were cleared. A good crop of forage maize was obtained while the threshing of the wheat grown resulted in an exceptionally good yield. About 75 acres of land were put under winter potatoes. The early rains in September 1941 promised to yield an excellent crop but in common with many other farmers a considerable area of potatoes was lost owing to the heavy winter rains — some areas of the land being under water for several weeks. As soon as the land was cleared it was sown with wheat. A kerosene driven pump was fitted to one of the cleared wells so as to irrigate part of the land the following summer. With the exception of football grounds which were left for use of Service personnel, all worthwhile land was put under the plough. Large quantities of food for human consumption were grown on this land during the years 1941 to 1944 but with the easing of the food situation, a proportion of this land as well as a certain acreage on the Government Farm were utilised in the experimental stages of setting up a Seed Industry in Malta.

17. Labour Shortage.

Military compulsory service, shelter construction, maintenance of aerodromes and civil defence services contributed to a major degree in creating a shortage of agricultural labour. The additional burden thrown on the Department in cultivating the Marsa lands was made heavier by the impossibility of obtaining labour for the job. In this predicament the Army came to the rescue by allowing a squad of K.O.M.R. soldier-farmers to work on the fields. These troops were stationed at the Government Farm and kept under military discipline. Farmers in the country were not less embarrassed by this shortage of labour. As a palliative, a squad of fifteen skilled labourers from the Government Farm were made available to farmers on payment. Steps were also taken to release from Military Service those farmers and agricultural labourers who had been conscripted and to exempt from military service such as were called to serve. Where the extent of land did not warrant release or exemption, varying periods of agricultural leave were recommended to the authorities concerned. Every case was investigated by the Department by actual inspection of the land and, generally speaking, the system worked quite satisfactorily. Agricultural labour shortage became acute by the summer of 1942 and it was only when labour was released on the completion of shelter construction and from work on aerodromes that the situation was comparatively eased.

18. **Extension of powers.**

The sustained crescendo of air bombing which tended to disrupt normal life and which placed a severe strain on the administration reached its peak during 1942. Exceptional conditions required exceptional measures in the field of Agriculture which, more than ever, became so intimately connected with the life of the people. The Department never ceased from its onerous duty of initiating, directing and executing those tasks, whether agreable or disagreable, which were considered essential "for the prosecution of the war". Although quasi dictatorial powers were now given to the Department guided by the Board of Agriculture which had been reconstituted with executive powers under the Chairmanship of Mr. A. B. Cohen, Assistant to the Lieutenant-Governor, such powers were exercised only after mature reflection and only after it had been established beyond doubt that the means adopted were justified, under existing circumstances, in attaining such objects as would ensure to the individual an equitable share of the common pool of locally produced food. Systems which had been devised to curtail liberties of the farmer-producer had to be extended further to include, within the jurisdiction of the Department, not only what the farmer was allowed to produce but, also, the method of disposal of this produce when marketed. In order to ensure that no land was purposely left fallow, the Director of Agriculture was authorised to direct what use should be made of any land which, in his opinion, was being neglected. For this purpose "The Cultivation of Lands Regulations, 1942" were published by Government Notice No. 569 of the 29th October, 1942. Such unprecedented forms of controls as were taken naturally met, in certain instances, with severe criticism which, in a milder form, still persists as a legacy of those days. Vested interests had to be trampled upon, greediness had to be checked and egotism curbed — all this was unavoidable in our battle for survival. However, comfort was derived from the fact that the guiding principle, which pervaded throughout all the activities of the Department, aimed at fufilling conscientiously our obligations towards the majority.

19. **Cereal Collection Scheme.**

The wheat crisis which had been averted in July 1941 had now to be faced. The local crop of wheat, barley and meslin could no longer be left in the hands of the farmer who, normally, used it for bread making and livestock feeding. It had to be collected as a contribution towards the common granary. To attain this end, early in May 1942, steps were taken to collect information on acreages sown under cereals and, subsequently, orders were issued prohibiting the sale of grain, except to brokers appointed by Government for the purpose, and, also prohibiting the feeding of grain to livestock. Country flour mills where farmers ground the bulk of their grain for domestic use were compulsorily closed down. As soon as these measures were taken, a fleet of trucks was despatched to village squares, according to a pre-announced schedule, to collect grain which farmers were asked to bring in either voluntarily or compulsorily, direct or through a broker, at prices which had been fixed at £14 per local quarter of wheat and £8 per quarter of barley and meslin. Cash payments were made on delivery. It will be recalled that farmers were requested to surrender their wheat, barley and meslin following the Governor's announcement of a drastic reduction in the bread-ration and Sir Edward Jackson's broadcast on the arrival of the June 1942 convoy consisting of only *two* ships. These two factors did not make the task of collecting cereals any easier. Since 1940, the National Farmers' Union was working in close collaboration with the Department and the assistance given by its President, Lieut. Col. R. Strickland, E.D., and by its Secretary Mr. C. Zammit Marmarà, M.B.E., was especially valued. The conservatism of the farmer and the difficulties encountered in our propaganda work which, in 1942, were accentuated by continuous air-raids, required the utmost cooperation between the Department and any individual or group that had any influence over the farming community. A practical step in this direction was taken by Government, on the initiation of the Cereal Collection Scheme, in obtaining the services of Mr. Zammit Marmarà who by personal contact, through broadcasts and the written word, was instrumental in bringing forcibly to the notice of the farming community the current agricultural policy of the Government. Mr. O. Paris, M.B.E., who was then Superintendent of Public Gardens was made responsible, in his new capacity of Crop Control Officer, for the running (with the exception of the cereals purchase scheme) of the various emergency schemes which were adopted from the spring of 1942 onwards — a task which Mr. Paris acquitted with full credit.

20. **Livestock slaughter policy.**

(1) As stated earlier in this report, the local animal population had to depend on imported fodder concentrates. Although strenuous efforts had been made to maintain an uninterrupted supply of fresh animal products, prices of meat, milk and eggs soared high through increasing shortage of fodder. With the failure of the 1942 June Convoy, the general outlook had deteriorated to such an extent that all hopes of replenishing stocks had vanished. It was realised that food for direct human consumption and war material would receive first priority in the allocation of any possible freight to Malta — fodder was too bulky a cargo to load on severely restricted shipping, if any. Roughly 10,000 tons of fodder was all that was left for distribution by the end of November 1941 to feed 11,500 horses, mules and donkeys, 3,600 head of cattle, 27,000 sheep, 60,000 goats, 17,000 pigs and 1 million poultry and rabbits. The monthly ration issue was now reduced to one-third of the pre-war consumption and by April 1942 it was reduced further to one-sixth. *The last issue of fodder was made on the 16th June*, reserving a small balance for draught horses, weaner pigs and rabbit breeding stock.

(2) Earlier in the year, plans had been prepared to pursue a rigorous livestock slaughter policy which was ushered in when the Subsidized Meat Scheme first came in existence in May 1942. Attractive prices were offered to breeders for their livestock in order to accelerate slaughterings. Physical control of the purchased meat was undertaken by the Department at the Civil Abattoir where, owing to enemy action, considerable clearance work had to be carried out before embarking on the Scheme. Such meat was, in the initial stages, re-sold to the public, through specially licensed retailers, and to "Victory Kitchens" — at subsidized prices. By then, siege conditions were nearing the apex and a wholesale slaughter policy seemed to be inevitable. Stocks of fodder had been exhausted, supplies of fresh meat were most urgently required for feeding the population and land under fodder cultivation had to be freed for producing cereals and potatoes.

(3) The first holocaust in the sacrifice of compulsory destruction was the goat. It had been decided to retain the goat population as long as possible being the only source of milk supply but the safe arrival by submarine, in July 1942, of stocks of milk powder enabled Government to proceed with the scheme for the compulsory slaughtering of goats. The original intention was to spread slaughtering over a longer period but the failure of the June convoy and the pressing needs of the population rendered it necessary to accelerate the rate of slaughtering. Goats from the larger herds received first attention and, subsequently, the smaller herds were tackled — it was also borne in mind when requisitioning goats, to destroy animals of inferior quality in the first instance. Requisition orders directed goat-herds to slaughter a specified number of animals not later than four days after the serving of the order. Where such orders were not observed, they had to be enforced. A certain amount of understandable opposition from goat-herds was met with, in the opening stage of the Scheme, but a firm handling of the problem resulted in the elimination of some 25,000 goats.

(4) Fresh beef and pork became a great luxury and the negligible day to day purchases at the Abattoir were passed on for consumption in Public Institutions. Goat's flesh was absorbed by the Communal Feeding Departmen in the preparation of meals for "Victory Kitchens". There was no meat left for direct sale to the public and as a consequence, butcher's retail shops had to be closed down.

(5) While the requisitioning of goats was in progress, plans were formulated for the wholesale slaughter of cattle and horses which were not required in the production of food. As sheep in contradistinction from goats, relied on grazing, it had been agreed that, as far as possible, they should be spared for the sake of their milk production. Rabbits produced excellent meat and as in the case of Russia, it was planned that it should become our fourth line of defence. In August 1942, the Department confirmed the view that :—

"Rabbits can be maintained largely on home grown vegetables waste and weeds and when the supply of local meat is exhausted it may well be that we shall have to rely to a large extent on rabbit-flesh. It is important that the present rabbit population should be rapidly increased and everyone with facilities should keep rabbits".

(6) The compulsory slaughter of poultry raised tremendous difficulties and eventually the idea had to be discarded. The importance of fresh eggs to children and invalids was realised and though stocks of egg powder reached the Island in November it was felt that a total extermination of poultry was not yet justified, especially as poultry-keepers were left to fend for themselves as no fodder had been issued to them since June. However, the Department reiterated its views on the subject as follows :—

"Poultry keepers should not keep more poultry than could be fed on household scraps. On no account should grain that should be used for human food be fed to poultry. In Britain the maximum number of poultry that a family may keep is limited to six, and it is suggested that local poultry keepers should follow this lead".

(7) However after a prolonged day to day fight against a brutal enemy and against hunger it was decreed that the nation's suffering should be mitigated. Through the gallantry of H.M. Royal Navy and of the Merchant Navy, the state of siege was partially raised. By the arrival of food supplies in November it was possible to abandon the project for the compulsory slaughtering of cattle and horses and, early in 1943, when it became possible to place frozen meat on the ration, the slaughter of goats was suspended. The Government Meat Scheme came to an end on the 1st October, 1944, by Order No. 206 of the 29th September, 1944, by the Director of Agriculture who however continued to fix wholesale and retail prices of meat. Subsequently, on the 15th November, 1944, Order No. 206 was repealed and the decontrol of meat was complete (Vide Order No. 225 of the 11th November, 1944). The system of fresh meat distribution which came into being in 1942 when the Government was faced with the position of having to resort to compulsory slaughterings in view of the fast dwindling supplies of fodder was abandoned as soon as the animal population especially pigs showed a marked increase consequent on steadier supplies of imported fodder becoming available on the market.

(8) It is appropriate here to render a tribute to those gallant men who through their determination and undaunted courage succeeded, in the face of untold difficulties, to relieve this beleagured Island from its acute food shortage. To those who, in defying the Nazi might in the Mediterranean, sacrificed their lives our everlasting gratitude is unbounded.

21. Crop Control in the Fields.

(1) Apart from saving fodder and from providing supplies of fresh meat, under the stress of siege conditions, the compulsory slaughter policy and the subsidised meat scheme had the object of freeing land under fodder cultivation for the growing of food for human consumption. The attainment of this end was made possible through a system of crop controls originated by the Department. The tendency of the farmer to grow fodder for his livestock had to be nullified as a natural corollary to the set policy of livestock slaughter.

(2) Following a preliminary investigation into the various acreages under the more important crops, legislation was passed giving powers to the Department to order what crops should remain under cultivation or increased, what should be limited and what should be entirely eliminated. The Department was also given powers to order the inter-cropping of certain crops (Vide Control of Agricultural Cropping Regulations, 1942, published by Government Notice No. 420 of the 11th July, 1942).

(3) No sooner was this done, that growing of vetches, maize and green barley was prohibited. The sowing of red clover was limited to two tumoli for every draught animal owned by the farmer and the use of land for new plantings of vines and globe artichokes was forbidden. Later, farmers with five tumoli of cultivable land or over were compelled to put half their land under cereal cultivation, and to the inter-cropping of vineyards mainly with cabbages, beans and peas.

(4) However, legislation by itself was insufficient to produce results especially when it was directed towards the forcible growing of specified crops by farmers who had to contend with the uncertainties of the weather and the havoc caused by falling bombs. The protracted warm weather and late autumn rains emphasized the gloomy outlook produced by a recrudescence of air activity late in September and early October 1943. It was fortunate that such forebodings were soon to be dispelled. The

concerted attack by the enemy to re-establish air superiority over Malta was rendered ineffective by the valour of those fighter pilots who gave no quarter to the German fighter and bomber squadrons that came over at the time. In that final test of strength, the ground defences, which had no air cover in the earlier stages of the war, valiantly supported the Royal Air Force, succeeded in gaining the permanent mastery over their opponents. Useful rains which fell in November were most welcome to the farmer who, meanwhile, strengthened by the recent defeat of the enemy, resumed the cultivation of lands which had been rendered unworkable by the presence of gaping bomb craters. It was not long before the breaches were filled, on the initiative of the Department, and a green carpet had replaced the dreary scene of destruction.

(5) It was possible, therefore, to pursue crop controlling in a calmer atmosphere which enabled the farmer to intensify his efforts in food production. How far these efforts were successful may be seen from the following comparative figures taken from the 1942 and 1943 Spring Returns, namely :—

	1942	1943
Cereals	8,688 acres.	12,458 acres.
Potatoes	2,468 ,,	4,169 ,,
Tomatoes	1,987 ,,	2,745 ,,
Total ...	13,143 acres.	19,372 acres.

(6) In the summer of 1943 preparations were made for controlling the 1943-44 crops. Individual cropping orders were served on all farmers specifying the acreage of cereals which they had to grow and the acreage of vines which they had to intercrop. Following an improvement of the general position farmers were asked to cultivate only one third of their land under cereals as against one half during the preceding season. This concession was not, however, made applicable to those farmers who had failed to comply fully with previous cropping orders. Towards the close of 1943 the situation warranted the withdrawal of cropping orders. Most farmers however had already complied with the orders which had been served on them earlier in the season. As a logical consequence to the termination of cereal control, country mills were allowed to function again to the great satisfaction of the rural population. The removal of controls on the cultivation of fodder crops, mostly leguminous, was the first step taken towards the gradual breeding of livestock in the re-stocking programme and towards the progressive feeding of the soil which had become impoverished by those agricultural practices imposed on farmers by the exigencies of total warfare.

22. Fruit and Vegetable Purchase Scheme.

(1) The retail sale of vegetables and fruit engaged the attention of the Department in February 1942. A major project launched in July 1942 concerned the purchase and distribution of fruits and vegetables. At that time farmers were still selling their produce not only through "pitkali" markets but also from the fields direct to greengrocers and to consumers. Thus contractors to Government Institutions and the Armed Forces were finding it increasingly difficult to meet their obligations. As a preliminary, the Department, acquired powers to requisition supplies brought in "pitkali" markets in order to fill up such requirements and, later, as the organization grew it catered also for the needs of "Victory Kitchens". When these emergency kitchens were eventually closed down, vegetable distribution centres were opened in several villages. Such centres in effect replaced the "Victory Kitchens" in that they supplied to the public in a raw state what before the "Victory Kitchens" had supplied already cooked thus affording a welcome change from the monotony inherent to communal feeding which could not leave room for individual tastes.

(2) Vegetable Distribution Centres were dependent on "Pitkali" Depots where, with the exception of potatoes and onions which fell under a different scheme, farmers were compelled to bring *all* their fresh vegetables and fruits. They were paid by pitkali-wholesalers a fixed price less a commission for their services. The Department refunded to the pitkali the purchase prices paid inclusive of their commission. The produce was then transported to the various distribution centres for sale to greengrocers who paid 10% above the wholesaler's price. Such margin was the minimum required to cover shrinkage, transport and general administrative expenses. The greengrocers then charged the consumer a fixed retail rate which allowed them a margin of profit on their purchase price.

(3) Owing to meagre supplies in the initial stages of the Scheme, distribution had to be carried out on a rationing system. Families which had been registered with a grocer, baker and meat seller were also allotted a greengrocer. The plate-number and unit entitlement were, therefore, added on to the family ration-card.

(4) A ration issue was made according to the quantities of produce brought in Pitkali Depots and varied from two to five weekly issues. Distribution was effected on a weight basis. The daily total weight of produce in Pitkali Depots having been ascertained early in the morning it was transported to the various distribution centres in accordance with the registered number of customers in the district served by a particular centre. A certain number of families were tied to each greengrocer who, in turn, was tied to a distribution centre. A ration allocation was based on family units — every three persons in a family were entitled to a unit. Thus, the declared unit varied in weight, according to the quotient produced by dividing the number of registered units into the total weight of produce, in rotoli, available in Pitkali Depots. It was the same basis which decided what quantity of produce should be transported to the various distribution centres. The extent of the scheme may be gauged by the fact that sixteen distribution centres were required to serve six hundred greengrocers supplying over a quarter of a million persons. The Vegetable Rationing Scheme began to operate on the 25th January, 1943.

(5) The fundamental aim in evolving the vegetable and fruit rationing scheme was to spread supplies and to ensure an equitable distribution. It was possible to disperse the bulk of produce which was previously concentrated in "pitkali" markets and which was absorbed by families living in the vicinity of such markets. After the produce had been dispersed each family was assured a quota however small it might have been at Government controlled prices — black-market prices had been totally eliminated. Critics of the scheme argued that it caused delays and shortages. It was true that persons who lived in the proximity of "pitkali" markets were then able to buy less produce — that was one of the main objects of the scheme which, incidentally, was started when the shortage of vegetables was very acute. Moreover, the inexperience of a large staff which had to be employed and organised hurriedly and the illiteracy of greengrocers and the scarcity of containers were factors which caused unavoidable delays. It will be appreciated that such a complicated system which dealt with irregular supplies of a perishable commodity offered certain difficulties which the Department tried hard to eliminate wherever possible.

(6) Towards the end of March 1943, an improvement of the general food position made it possible to increase family rations. The general demand for vegetables was therefore somewhat eased, and by the end of September it became possible to de-ration them altogether. Control on the marketing of produce, however, was retained in view of the unsatisfactory state at "pikali" markets. Pitkali had formed themselves into a pool which, however, did not materially help internal marketing conditions, but it did help the plans of the Department towards the elimination of distribution centres and the bringing together of pitkali who operated in separate premises, in centralised markets, with the object of exercising stricter control and of speeding up distribution — once it was possible to do away with the rationing of vegetables.

(7) The Centralised Wholesale Markets System started functioning on the 1st March, 1944. It had been delayed by the difficulty of finding suitable accommodation and of carrying out re-decoration and structural alterations where necessary. Moreover, the arrival of dial-spring balances which had been ordered from the United Kingdom was somewhat delayed. It was well worth waiting. The system embodied revolutionary principles in the relations between "pitkali" and farmers. Under the old system the farmer dumped his produce in the "pitkalija" and went away fervently praying that his "pitkal" was an honest man. The farmer was neither aware of the weight of produce which he had taken to market straight from the fields nor the price it fetched when sold in his absence. At irregular intervals but mostly immediately before rent became due the farmer tramped down to his "pitkal" to settle accounts. In some instances, these were kept on a stick of wood engraved with hieroglyphics and, in other cases, the way written accounts were kept was undecipherable even to literate people. Undoubtedly, the pitkal played an important role in the life of the farmer he advised him, sold him seeds and fertilizers and when necessary (it was very often in pre-war days) lent him money with interest. This latter practice whilst solving the farmer's immediate difficulty tied him down to the money-lender for an indefinite period and in bringing his produce to market he was morally bound to deliver it to the pitkal to whom he owed money.

(8) The centralisation of wholesale markets fundamentally changed such practices. As soon as the produce reached the "pitkalija" it was weighed on spring platform balances which were provided with dials showing readings in English and Maltese weights. The farmer soon learnt to read the dials which were visible to all and sundry and to check such reading, by himself or with the help of a friend, with the voucher showing weight and value which was prepared and delivered to him by departmental inspectors whilst departmental cashiers effected immediate payment, if the farmer so desired. The system afforded complete satisfaction to the farmer in the different stages of the proceedings. The duties of the "pitkal" were restricted to the weighing of produce, its handing over to the department's distribution machinery and the return of empty containers to farmers. As departmental staff undertook the sale of produce direct to greengrocers from whom they received payment, "pitkali" were relieved from all financial responsibilities and, consequently, their commission was reduced, by means of negotiations, from eight and a third per cent to five per cent.

(9) Under the centralised markets system, the Department continued to be responsible for the purchase and sale of all produce brought in and for price-fixing. In order to regulate supplies a system of directed cropping was introduced by means of contractual obligations with the producer in respect of certain main vegetables. Production and consumption, in other words, the supply and demand of fresh produce was so erratic that whilst under a particular set of circumstances, the Scheme was obviously advantageous to the consumer, on other occasions it caused considerable embarrassment to the Department. Crops which were expected to reach the market over a certain period of time became mature, through weather conditions, during a shorter period, thus causing gluts and consequent waste. An unprecedented supply of tomatoes which occurred after the heavy downpour in August 1944 confronted the Department with a serious problem, which compared well with an earlier problem caused during the invasion of Sicily. The "Grow More" propaganda carried out in 1943 was successful in producing larger crops but, as production cannot be suspended, it was found that on reaching maturity, the garrison had been drastically reduced and there were less people to feed. These factors produced temporary gluts which occasioned a certain amount of criticism.

(10) The increased supply of imported food including produce from Sicily made it more difficult to run the Scheme. Its working, however, was modified to suit changed conditions. Every effort was made to increase the speed of distribution so as to ensure that produce reached the consumer in the best of conditions and to avoid deterioration and loss. As greengrocers lacked transport facilities they were buying less than they would normally be able to dispose of thus creating an artificial shortage which affected prices. To overcome this difficulty, departmental trucks were used to supply greengrocers in their own village. Moreover, such artificial shortage which created black market prices was combated by the sale of produce direct to the consumer. Truckloads of vegetables and fruit were conveniently sited in the more populous areas and, in certain cases, next to a greengrocer's shop, selling produce at the declared controlled prices. Apart from providing the consumer with increased supplies at Government prices, sales from departmental trucks had the visible effect of bringing down prices in the greengrocer's shops. Even the severest critics of the system could not find much fault with direct truck sales.

(11) The accusation that the Department was throwing produce away in order to keep artificially high prices, was grossly unfair. Any real waste which was not due to conditions already referred to above occured mostly with uncontrolled produce. An explanation is here necessary. Although the Department retained physical control of the produce, price control was limited to the more important types of vegetables and fruit. Certain vegetables were allowed to be sold freely by auction. It was found that waste occurred in those cases where price was not controlled and the greengrocer was allowd to purchase and sell, at his complete discretion, without any interference from State control. A further proof that the Department was not maintaining artificially high prices was graphically illustrated when all produce coming from Gozo was allowed to be auctioned. In the majority of cases, such produce fetched wholesale prices higher than the maximum retail prices fixed by the Department for the corresponding Malta produce.

(12) The alleged wide margin which existed between the producer and consumer prices was another unfair criticism levelled against the Scheme. A reference to pre-war reports of the Department, however, revealed the fact that such gap was as high as 150% which was not the case with produce sold under the scheme. When such comparison was made, it had to be remembered that the price paid to the farmer was net,

the pitkal being paid by the Department. Moreover, the farmer and the pitkali were both paid on the weight of the produce as recorded at the time it was delivered by the farmer at the Depot thus, although shrinkage and overhead expenses had to be considered in deciding on the various margins of profit these were not as high as would be expected under existing circumstances and, in point of fact, were lower than corresponding profits obtainable when produce was totally uncontrolled.

(13) It is felt that the facts outlined in paragraphs 11 and 12 above should dispel once for all the view held in certain quarters that the Department aimed only in serving the interests of the farmer-producer and of the wholesale purchaser for sale by retail, to the detriment of the consumer. The fundamental policy of the Department has been and, I trust, will always be, to step up production by allowing an economic return to the farmer and a decent margin of profit to the greengrocer retailer in the ultimate interest of the consumer. Such policy aims at preventing the farmer-producer from returning to that state of chronic indebtness existing in pre-war days which in the long run does not even benefit the consumer as it retards progress in the field of Agriculture which is our foremost wealth-producing industry.

(14) The Fruit and Vegetables Purchase Scheme outlined above was controlled by the Director of Agriculture in virtue of the following regulations, viz :—

(a) The Retail Sale of Vegetables and Fruit Regulations, 1942, published by Government Notice No. 88 of the 12th February, 1942;

(b) The Control of Fruit and Vegetables Regulations, 1942, published by Government Notice No. 322 of the 1st July, 1942; and

(c) The Agricultural Produce (Control) Regulations, 1942, published by Government Notice No. 348 of the 10th July, 1942.

23. Publication of "Il-Bidwi".

On the 31st August, 1942, Mr. Zammit Marmarà suggested the publication of a periodical containing agricultural news and technical information. The idea was acceptable as it was desired to reach through the written word mainly those communities which lacked the benefit of a village loudspeaker on which agricultural broadcasts were being relayed and, also, to dispel categorically any misunderstanding which might have arisen from the interpretation of information or directions issued by the Department. However, what stock of newsprint remained in those days was jealously guarded by the Government Printing Office and by the Information Officer — and it was with the greatest difficulty that the Department was finally permitted to print 500 copies fortnightly of "Il-Bidwi" (The Farmer) which made its first appearance as a departmental publication on the 15th November, 1942, under the editorship of Mr. Zammit Marmarà. With newsprint becoming available and to satisfy an ever increasing demand the circulation of the periodical was raised by successive stages up to 5,600 copies a proportion of which is being used as reading matter in the adult Evening Classes, organised by the Education Department, with the double object of imparting agricultural knowledge amongst villagers and of teaching the Maltese Language. Unfortunately, a general curtailment of expenditure accounted for the issue of "Il-Bidwi" once a month instead of fortnightly as from the 1st April, 1946. Mr. J. Orlando Smith was appointed Editor of "Il-Bidwi" as from the November 1947 issue on the relinquishing by Mr. Zammit Marmarà of his appointment with Government.

24. District Agricultural Officers.

(1) In October 1942 Government appointed eight District Agricultural Officers each of whom was given charge of a District Agricultural Office. For this purpose, Malta was divided in six districts viz. St. Paul's, Mosta, Birkirkara, Siġġiewi, Żejtun and Żurrieq. Gozo was divided into an eastern and western district. Staff having a knowledge of agriculture and acquainted with farmers were engaged for this work. The wisdom of this decision soon became apparent as with the number of varied schemes in operation — schemes which contained new ideas and imposed tight restrictions on farmers — it was impellent that there should be in the country districts accredited representatives of the Department explaining the current agricultural policy. The duties of these officers may best be described by an extract from their letter of appointment which ran as follows :—

"Generally your duties will include the maintenance of your office with attendant "clerical duties, regular visits to farmers in all weathers, advice to farmers, inspec-

"tion of farms and buildings for the purpose of checking agricultural censuses, "providing crop estimates, enforcement of agricultural legislation and liaison with "village committees of farmers, attending their meetings as Government represent- "ative, keeping them informed of Government's policy and receiving their co-opera- "tion in its fulfilment".

(2) These agricultural officers rendered a valuable contribution to the war effort of the Department by succeeding in obtaining the confidence of the farmer who in all his many and perplexing difficulties sought their advice and help. The system functioneod well and smoothly and although created as an emergency measure it showed definite possibilities as a permanent institution. It was, therefore, with great regret that these offices were closed down and the posts abolished in view of curtailment of expenditure during the financ al years 1944-45 and 1945-46.

25. Citrus Control Scheme.

In order to avoid a repetition of the unduly high prices which were paid for citrus fruit harvested in the 1941-42 season and with the object of ensuring distribution of citrus fruit mainly to growing children whose health was being impaired through shortage of adequate nourishment, Government decided, on the recommendation of the Board of Agriculture, to requisition the 1942-43 crop of citrus-fruit. This was made possible by the enactment of the Control of Fruit Regulations, 1942, published by Government Notice No. 577 of the 3rd November, 1942. Great stress was made on the importance of collecting the whole crop which was to be issued on a rat on basis at a subsidised price so that the scheme would benefit also the poorer classes. Accordingly an attractive price was offered to the grower and a substantial fee paid to brokers for bringing in the fruit. In my opinion this Scheme was a successful experiment to demonstrate that, *in the circumstances obtaining at the moment*, legislation by itself would have been insufficient to ensure the acquisition of the whole crop and that as the health of the children population could not be translated in terms of money, financial considerations, of necessity, had to be given secondary importance if the main object had to be attained as it actually did. The working of this Scheme was entrusted to Dr. G. Peralta, the Plant Pathologist, and his Section.

26. Basic Agricultural Census 1942.

The Department of Agriculture was invited to participate in the World Agricultural Census held in 1930. The Department was then ten years old and therefore lacked the necessary maturity and means to collaborate with other countries by producing an agricultural census of the Maltese Islands. The opportunity presented itself some years later when it was proposed to hold the 1940 World Agricultural Census. By this time the Department was fully alive to the importance of Malta taking part in the World Census as agricultural data were very lacking and with the expansion of the Department, which took place in the intervening years it was considered essential to have basic information which would enable it to formulate its agricultural policy. Unfortunately, in view of the general economy which was being practised at the time it was not found possible to release the necessary funds for the purpose and, moreover, with the rumblings of war ahead, the time may not have been opportune to disclose the agricultural potentialities of these Islands.

(2) However, the necessities of war which caused such profound changes in our agricultural outlook made it impellent for the Department to take stock of the agricultural situation. In the circumstances, by Order No. 27 of the 1st September, 1942, and Order No. 28 of the 15th September, 1942, by the Director of Agriculture, all persons in Malta and Gozo cultivating not less than half a tumolo of land were directed to make a declaration at the nearest Police Station stating :—

(a) their name and address,

(b) the legal tenant of the land and the name and address of the landlord;

(c) the total area in tumoli, farmed by them, specifying how many tumoli were (a) irrigated (b) under vines and (c) waste.

(d) make and horse-power of motor-pump, if any,

(e) any other trade practised,

(f) name and location of each plot of land and its area in tumoli, and

(g) names and ages of members of the family.

(3) Each farmer was given a Registration Card which served to identify him in all his dealings with the Departmnet and on which appropriate squares were provided for recording individual issues of seed potatoes, vegetables seeds, artificial manure, etc., which, at the time, had to be officially controlled. It was quickly realised that without the production of such Registration Card it was not possible to share in the distribution of those agricultural commodities which the Department was issuing from time to time.

(4) The material collected from the farmers' declarations was built up in a Card Index System on the basis of which it was proposed to carry out later a detailed field survey. A copy of the Card Index was furnished to District Agricultural Officers in respect of farmers residing in their District.

27. Agricultural Survey 1943.

(1) Apart from legal sanctions, every inducement was offered to farmers to register under the Basic Agricultural Census, 1942. The chief attraction, of course, was the participation in any departmentally controlled distribution of agricultural commodities in short supplies. This procedure guaranteed a hundred per cent registration of farmers but as anticipated such registration did not ensure that statements relating to location, character and area of each plot of land declared were necessarily correct or complete.

(2) To overcome such difficulty and in order to obtain a true picture of land tenancy in these Islands it was represented to Governmen that it would be essential to carry out a detailed survey of rural property. Such view was upheld by Mr. Grieve of The Imperial Chemical Industries who advised the Department on several matters during his visit to Malta early in 1943 and a tentative estimate of expenditure for the purpose was approved by Government.

(3) The scheme was placed under the direct supervision of Dr. Azzopardi, the Superintendent of Government Farm and Agricultural Organiser, who happened to be also a Civil Engineer. Dr. Azzopardi was assisted in this formidable task, for a short period, by Mr. Swynnerton who was at the time helping in the agricultural activities of the Department and by Messrs. Crozier and Hamlyn who were specially loaned by the Ministy of Ariculture for this type of work.

(4) The basis for the survey was provided by 25″ Ordinance Survey Sheets on which every plot of land was numbered. Detailed checking of the plots was carried out in the field collecting valuable information at the same time. Such plots were subsequently measured by means of planimeters and the relative area entered on each plot in the Survey Sheets. Unfortunately, no such sheets existed for Gozo. The 25″ Ordinance Surveys Sheets for Gozo contained only boundaries of roads and in order to fill in the gaps 25″ aerial mosaic photo-maps of Gozo were prepared with the kind collaboration of the United States Army Air Force. While in some maps the mosaic were well fitted and the details clear, others were badly fitted and blurred. Arrangements were therefore made with the Director of Public Works for his staff in Gozo to check over the photo-maps on the spot with the aid of the 25″ survey blanks showing roads, etc., thus making it possible to obtain accurate tracings from which prints were subsequently made for use in the field-to-field survey.

(5) Copies of completed survey sheets were provided to District Agricultural Officers in respect of areas included in their district and in anticipation of a fresh census.

(6) The Survey of Agricultural land which has been carried out emphasizes the necessity of instituting a "Cadastre". It has also shown glaringly the fractional splitting of land which is being carried on continuously to the obvious detriment of production. These problems, it is submitted, should receive careful consideration by Government.

28. Seed Production Industry.

(1) Purity and power of germination are an essential factor in the quality of seed which has such an important influence on the ensuing crop. In the early years of the war when the normal sources of supplies of vegetable seeds became dried up greater attention was paid to locally grown seeds. Seeds which had been imported from Egypt were rather indifferent and recourse had to be made to the United Kingdom for supplies from already limited stocks.

(2) The problem of producing vegetable seeds locally on a larger scale was investigated, in the first instance, by Mr. E. Skillman who had been loaned to the Department by the Ministry of Agriculture and Fisheries in the United Kingdom. As a preliminary measure an important piece of legislation was passed, under emergency regulations, giving powers to the Director of Agriculture to inspect any seed crop and to destroy any crops liable to cause cross-pollination to seed crops grown by or on behalf of the Department of Agriculture. The relative regulations, which were published by Government Notice No. 505 of the 30th September, 1942, required also that any person wishing to produce any seed other than for his own use had to obtain a permit from the Director of Agriculture. Subject to certain reservations Mr. Skillman also delineated the possibility of post-war production of vegetable seed on a commercial scale. On the return to England of Mr. Skillman early in 1943 he was succeeded by Mr. R. Hay who had had considerable experience in commercial seed growing. Mr. Hay interested himself particularly in establishing a seed export trade after the war and with this end in view arrangements were made to send small trial consignments of Malta grown seeds to the United Kingdom from the 1944 season. Meanwhile, contracts were placed with farmers to grow certain vegetable seeds while other vegetable seeds were grown on Government owned lands for local sowing. This work proved invaluable in determining local seeding rates, flowering times and crop yields with a view to estimating costs of production.

(3) The climate of Malta is particularly suitable for the production of seed and following events established the incontrovertible fact that the quality of seed which could be produced was second to none. Apart from the immediate financial benefit which might be derived by the seed producer a properly organised seed-industry would give much scope to specialisation without which agriculture anywhere cannot thrive. The project was considered on a long term policy envisaging the disappearance of pre-war gluts of vegetables which kept the farmer in poverty and their replacement by a sane cultivation of crops for seed purposes which could be grown on an economic basis. The growing of seed is essentially a business proposition and since the inception of the scheme it was considered as a "sine qua non" that if the project survived the experimental stage it should be handed over to private enterprise.

(4) Much of the spade work performed during the intial stages of the scheme by Mr. Hay, enabled the Department to satisfy the seed trade, especially in the United Kingdom, as to the suitability of Malta as a seed-producing centre. Such good work was carried on indefatigably by Mr. Zammit Marmarà on his appointment as Horticultural Officer in the place of Mr. Hay who had taken up an appointment in Germany. In spite of the many difficulties encountered amongst which may be mentioned the reluctance of farmers to grow crops for seeds either because they were not yet convinced of the potentialities of the industry or because in certain instances they could obtain better prices by taking their produce to market, the volume of production increased steadily. On the 5th July, 1945, reporting on the future policy of the Seed Industry I stated that "farmers are now taking to the idea of "seed growing with increased enthusiasm. We now have more than 150 farmers "who have grown or are growing small lots of seeds. They are definitely interested "and anxious to do more. They and others hold back only on a question of price. "As prices for local market produce continue to fall so the seed growing proposition "becomes more attractive to farmers. The gradual decline in the prices of vegetables "coupled with the most important part of work, namely, interesting and teaching "farmers on seed production should establish this industry on a firm and profitable "footing. It has been the declared policy of Government to hand over eventually "this important industry to private enterprise". As a matter of fact towards the end of 1946, it was felt that the experimental stage had been completed and that there was no further justification for the Department to continue this activity. Accordingly plans were outlined for handing over the industry to private enterprise as originally contemplated.

(5) The fulfillment of such a project was effected by United Kingdom firms promoting a local company for this purpose. A monopoly was granted by His Excellency the Governor giving the "Malta Seeds Ltd." the temporary exclusive right to contract for, process, deal in and dispose of all flower and vegetable seeds growing in these Islands for sowing purposes abroad subject to certain conditions (Vide Government Notice No. 599 of the 4th November, 1947). The "Malta Seeds Ltd." was formed

by private agreement enrolled in the acts of Dr. C. G. Vella, Notary Public, of the 24th July, 1947, and published in accordance with and for the purposes of the Commercial Code in the Government Gazette of the 20th September, 1947.

(6) Although from the financial aspect this venture has not proved so far the success which it was anticipated, however, it is felt that there should be a future for this trade which should help in the years to come our trade balance. The Seed Industry is productive of wealth from the labour of our farmers. It was most unfortunate that during the initial stages, our agriculture was hardly hit by a drought which we are still experiencing in a more severe form and which naturally affected adversely this promising industry. One cannot but hope that in time the advantages of this enterprise will be made clear to all who have been so far, not without reason, sceptic of good results and that the spade-work performed by the Department of Agriculture will eventually be much more appreciated by farmers and will prove to be benefical to the whole community.

(7) More detailed information on the Seed Production Scheme is given in Appendix "11" prepared by the Horticultural Officer.

29. **The Co-operative Movement.**

(1) An eminent authority on co-operatives, Mr. Strickland, rightly asserts that "wherever agriculture is the predominant industry, co-operation is coming to be regarded as the natural basis for economic, social and educational development". This general proposition has been unconsciously felt since 1934 after Sir Frank Stockdale had published his "Report on the present condition of agriculture in the Maltese Islands" in which he made reference to the possibility of establishing co-operative societies in Malta. Dr. Micallef who was then at the head of the Department of Agriculture pursued the matter in official quarters. A Committee was appointed but it does not appear that it prepared a report. It would seem likely that the essential requirements outlined by Sir Frank Stockdale which envisaged the establishment of "a satisfactory system of grading and marketing" as a first step to co-operative undertakings, proved insurmountable obstacles in those days of undisciplined marketing of agricultural produce. Moreover, the practice of co-operation needs expert knowledge which in 1935 was completely lacking.

(2) When the idea of introducing co-operatives in Malta was revived early in 1943 by Mr. T. V. Scrivenor, Assistant to the Lieutenant-Governor, it found a more fertile ground owing to the changed circumstances brought about by the war. The various forms of controls introduced by the Department of Agriculture and especially so the Fruit and Vegetable Purchase Scheme more than ever linked the farming community with the Department of Agriculture. The farmer, traditionally reluctant to accept innovations, had by then admitted that those controls which he had been describing as vexatious and unnecessary, in fact did not operate to his disadvantage. Problems which had previously resisted any attempt at solution resolved themselves as a matter of course. Farmers had been disciplined under the stress of the emergency to market their produce in an organised manner through channels completely different to those obtaining in pre-war days and the time was considered ripe to introduce co-operation amongst the farming community in the first instance.

(3) The problem was tackled in earnest. The appointment of a whole-time Registrar of Co-operative Societies and the enactment of a Co-operative Societies Ordinance were considered indispensable. Advantage was taken of a visit to the Middle East by Mr. H. Hirst, then acting Director of Agriculture, who in a subsequent report submitted concrete proposals on the introduction of the co-operative movement on which basis the matter was further investigated. Early in 1944 Mr. W. H. K. Campbell, a former Registrar of Co-operative Societies in Ceylon and an expert on the subject gave us the benefit of his experience during a visit to the Island at the request of Government and action was taken on the lines approved by him. Intensive propaganda was carried out in the country to introduce co-operative principles and to form District Committees. Mr. Paris, Mr. Zammit Marmarà and myself addressed successfully large gatherings of farmers who afterwards elected their own committees which were the forerunners of the present registered co-operative societies.

(4) Meanwhile, a small committee was appointed to draft the necessary legislation. Mr. Paris was selected as Registrar Designate and in this connection he travelled to Cyprus, Palestine and Egypt during the period August to October 1944.

Early in 1945, Mr. Paris submitted to Government a study on the working of co-operative societies based on his investigations abroad. This report was published in 1946 and the Secretary of State for the Colonies, to whom a copy was forwarded, signified his appreciation of this most lucid, comprehensive and valuable work.

(5) The Draft Bill to introduce co-operatives was passed through the various stages by the Council of Government and on the 8th July, 1946, Ordinance No. XXXIV of 1946 entitled "An Ordinance to provide for the Constitution and Regulation of Co-operative Societies" received the assent of H. E. the Governor. Mr. Paris who during the war years acted as Crop Control Officer and later as Controller of Agricultural Marketing was appointed Registrar of Co-operative Societies on the 12th December, 1946.

30. Gozo Aerodrome.

Giant bulldozers converted about 250 acres of green fields in Gozo into an emergency aerodrome. The job was carried out with amazing speed in July 1943 and at the shortest of notice the Department carried out a survey of the crops in the area affected and of the tenants involved and assisted the Service Authorities in checking claims for compensation due to dispossessed farmers. The aerodrome which was used by U.S. Army Air Force fighter squadron was relinquished early in August and the Department again took over by ploughing out the land and by reinstating former tenants as soon as boundaries of their farms had been marked out by the Public Works Department. The majority of land, which was under dry cultivation, was back to the normal production of the ensuing winter crops.

31. Agricultural Census 1944.

(1) Following the field-to-field survey of agricultural land it soon became apparent that the global information obtained during the Basic Agricultural Census, 1942, was defective and, in 1944, as a remedial measure it was decided to carry out a fresh Census. This was made possible by the enactment of Order No. 146 by the Director of Agricuture of the 17th March, 1944.

(2) It will be recalled that District Agricultural Officers were furnished, in respect of their district, with a copy of the material collected in the 1942 Census and of completed survey sheets.It was now necessary to correlate the information about to be collected with the completed survey sheets. To ensure this it was considered that individual farmers should be asked to identify the lands held by them on the relative map and where this was not possible to carry out an inspection on the spot. Farmers were accordingly requested to call on receipt of a notice signed by the Director of Agriculture at their respective District Agricultural Office in terms of the above mentioned Order.

(3) While registering their lands, farmers were made to declare, in addition to the information requested in the 1942 Census which was then brought up-to-date, the following further particulars :—

(a) the occupation of every member of the family;

(b) the registered number of any carts, lorries or other vehicles owned;

(c) the number of pumps or other devices for lifting irrigation water, owned or used, specifying the type, make and capacity of such pumps or devices and the type of fuel used.

(4) With the object of keeping the Survey up-to-date any person who makes a return under that Order, which is still in force, is bound to report any subsequent increase or decrease in the area of land within one month. For the purpose of the Order, land included "a domestic garden or other land "annexed to a building which can in any way "be used for agricultural purposes". Moreover, in order to assist the registering officers in their difficult task, farmers were required to produce their Registration Card and that of any member of their family, the latest rent receipts and their Continuous Service Booklet, if any. Every farmer who was registered under the 1944 Census was given a new Registration Card having a different colour to that used in the 1942 Census.

(5) It will be appreciated that the details involved in each registration were considerable and the magnitude of the task may be gauged by the fact that in Malta alone over 120,000 plots had to be identified and marked accordingly.

32. **Repeal of certain Emergency Legislation.**

The following emergency legislation was repealed by Government Notice No. 275 of the 7th July, 1944:—

(a) G.N. No. 82 dated 7th March, 1941, publishing regulations increasing the penalties, for the illegal growing of tobacco, contemplated by the Tobacco Growing (Control of) Ordinance, 1939;

(b) G.N. No. 327 dated 5th July, 1941, as amended by G.N. No. 344 dated 25th July, 1941 and G.N. No. 439 dated 19th September, 1941, publishing regulations regarding the use of potatoes in the manufacture of bread;

(c) G.N. No. 350 dated 25th July, 1941, as amended by G.N. No. 411 dated 29th August, 1941, publishing Regulations imposing the registration of wheat crops;

(d) The Cultivation of Lands Regulations, 1942, published by G.N. No. 569 dated 29th October, 1942, which empowered the Director of Agriculture to take over any land which was not being cultivated with food crops to his satisfaction;

(e) The Control of Fruit Crop Regulations, 1942, published by G.N. No. 577 dated 3rd November, 1942, imposing restrictions on the sale and disposal of fruit crops.

33. **Decontrol of Potatoes and Onions.**

(1) As an emergency measure the Director of Agriculture had been given the power to requisition and to control the carriage of all potatoes grown in Malta and the relative Regulations were published by Government Notice No. 584 dated 5th November 1942 and by Government Notice No. 623 of the 19th November, 1942. These Regulations were subsequently made to apply also to onions by Government Notices No. 269 and 270 of the 28th May, 1943.

(2) In view of the relative improvement in the food position it was felt it was no longer necessary to insist on this irksome imposition and therefore, Government decided to repeal the above regulations. Such decision was given effect to by Government Notice No. 456 of the 3rd November, 1944, and the winter crop of potatoes which had made its appearance on the market was entirely decontrolled and moreover, farmers and consumers alike were able to deal in onions without state intervention. One should well observe in this regard that the removal of this and other similar controls were agreed upon by Government in order to satisfy a natural desire of the people to have more freedom from wartime impositions which were so reminiscent of the siege period.

34. **Abolition of Fruit and Vegetable Purchase Scheme.**

Controls are vexatious of their own nature and a nation which had suffered hunger under incessant bombing with all consequent unavoidable restrictions was looking forward to be relieved of war controls at the earliest possible opportunity. With the Allies firmly established on the Continent and thrusting into the heart of Germany, the clamour for decontrol became louder and louder both in the Press and in the Council of Government. The Government met in an increasing degree such public feeling be relaxing the restrictions on the purchase and sale of all vegetables and fruits. As a further step the legislation referred to in paragraph 22 (14) was repealed by Government Notice No. 207 of the 1st May, 1945. The Government Fruit and Vegetable Purchase Scheme as such was abolished on the 30th April, 1945.

35. **The Agricultural Produce (Sale by Pitkali) Regulations, 1945.**

As from the 1st May 1945, arrangements were made for pitkali to go back to their old premises and for the unfettered and uncontrolled sale of fruit and vegetables. However, one very important exception was made. Through the Agricultural Produce (Sale by Pitkali) Regulations, 1945, published by Government Notice No. 186 of the 20th April, 1945, the supervision and control of "pitkali" by the state on behalf of farmers who paid directly for this service was insisted upon successfully by the Department and is still in force at the time of writing this Report. When an attempt was made to eliminate this supervision the Government very wisely obtained the views of farmers who at a general meeting of their delegates held on the 10th November 1946, decided unanimously that the state should retain control over receipts and payments at "pitkali" centres and that for this service they were willing to forego a larger deduction from the proceeds of their produce when sold The pre-war deduction of eight and a third per cent was increased to ten per cent.

the pitkali earns six and one fourth per cent and the remaining three and three fourths per cent are retained by this Department to cover all expenditure connected with the running of this form of supervision. It cannot be stressed too much that the ten per cent commission is deducted from the farmer's gross proceeds after his produce has been sold by auction. It is well to place on record, also, that the reduction in the commission earned by pitkali was consequent on the elimination of their financial responsability towards the farmer and of their risk from losses formerly sustained by them through sales to greengrocers on credit.

36. **Price Control of Agricultural Produce and its enforcement.**

(1) In anticipation of the coming conflict which influenced the stableness of the market price of commodities steps were taken by Ordinance IV of 1939, "to provide for the prevention of the inflation of prices of certain essential commodities". In virtue of the powers vested in His Excellency the Governor by this Ordinance, a Price Control Board was constitued by Government Notice No. 48 of the 3rd February, 1939, in an advisory capacity and the public was invited to submit to the Board any relevant information. Vegetables, fruit, eggs, meat and fodder were included in the Schedule to the regulations published by Government Notice No. 52 of the 3rd February, 1939, "for the purpose of checking abuse in the sale of essential commodities". On the 25th August, 1939, by Government Notice No. 382, a Food and Commerce Control Board was established with a larger representation and to replace the Price Control Board. The functions of the Food and Commerce Control Board were "to deal with the supply, control and distribution of all articles of food and other supplies of any kind, essential to the life of the community". The directions of the Board were published in the form of orders by the Food and Commerce Control Officer under regulation 50 of the Malta Defence Regulations, 1939. During 1940 various orders were published controlling the prices of fodder and of sulphate of copper.

(2) As time went by the shortage of commodities was felt more acutely and abuses were consequently on the increase. In order to countercheck this tendency Government issued the Price Control Regulations, 1941 (G.N. No. 431 of the 12th September, 1941). A Price Control Board was again constituted by Government Notice No. 432 of the 12th September, 1941, for the purpose of para. 2 (i) of the Price Control Regulations. A novel feature introduced by these Regulations was the institution of local committees under the Chairmanship of a Regional Protection Officer or of a District Commissioner to take cognisance of offences by retailers and householders against orders issued by the Food and Commerce Control Officer which included price fixing. The Price Control Board as reconstituted fixed, for the first time, prices of vegetables and fruit by Order No. 152 of the Food and Commerce Control Officer of the 4th October, 1941. The last price-fixing of Vegetables and Fruit by the Price Control Board was made by Order No. 350 of the 26th November, 1942, by the Food and Commerce Control Officer.

(3) Meanwhile, with the deterioration of the food position it became necessary to introduce more stringent measures. On the 1st July, 1942, Government published a statement on the projected measures against the black-market. These consisted in the issue of the Price Control and Prevention of Profiteering Regulations, published by Government Notice No. 321 of the 1st July, 1942, the Agricultural Enforcement Board Regulations published by Government Notice No. 323 of the 1st July, 1942, and an amendment to Order No. 83 by the Food and Commerce Control Officer. A Food Control Enforcement Board was set up. It took over the judicial functions of the Price Control Board so that heavy punishments could be meted out for the more serious offences. In the words of the declaration made by Government the change was due "to the necessity of setting up a board with much wider powers than those "exercised by the Price Control Board, powers in fact which are so extensive that "one of His Majesty's Judges has been asked to be Chairman of the body wield-"ing them". Lesser offences were continued to be dealt with by the Local Committees referred to above.

(4) Early in 1943 it was felt that the fixing of prices of agricultural produce should be delegated to a specialised body and such function was henceforth exercised by an Agricultural Produce Price Control Committee set up by Government Notice No. 57 of the 26th January, 1943. This committee which included representatives of farmers, greengrocers and consumers met under the Chairmanship of the Director of Agriculture "in order to advise the Food and Commerce Control Officer" over whose

signature Orders fixing prices of agricultural produce continued to be published up to April 1943 when the first price fixing of vegetables and fruit was made by an Order by the Director of Agriculture (Order No. 52 of the 30th April, 1943). Complete decontrol in the prices of vegetables and fruit came to an end on the 1st May, 1945, by Order No. 262 by the Director of Agriculture.

(5) However, it soon became apparent that some form of price-control on local produce was indispensable. Representations in the Council of Government and in the Press moved the Government to appoint a Committee, on the 24th August, 1945, with the following terms of reference :—

"To advise what measures should be adopted, consistent with the making of "fair profits, to reduce the cost to the consumer of locally produced foodstuffs."

(6) This Committee was constituted as follows :—

The Food and Commerce Control Officer, *Chairman*.
The Assistant to the Lieutenant-Governor.
O. Sammut, Esq., C.B.E.
The Collector of Customs.
The Director of Agriculture.
A representative of the Chamber of Commerce.
A representative of the General Workers Union.
A representative of the Malta Civil Service Association.
A representative of the National Farmers Union.

(7) An Interim Report by the Committee together with a "Statement of Government Policy re control of Prices of Local Produce" was published as a Supplement (No. XLV) of the Malta Government Gazette on the 21st September, 1945. Government accepted "the system of price control recommended" by the majority of the Committee embodying such recommendations in the Local Price Control and Enforcement Regulations, 1945, published by Government Notice No. 485 of the 10th October, 1945, which in the first instance, were made to apply to vegetables and fruits. Subsequently these were extended to meat and fish. These regulations provided, inter alia, for the establishment of a Local Price Control Board. The maximum selling prices of local produce fixed by the Local Prices Control Board were henceforth published in the form of Orders under the authority of the Food and Commerce Control Officer.

37. **Fertile Soil Preservation.**

(1) An important function of the Department is the preservation of fertile soil which becomes available from building operations. The control of such soil is governed by the Fertile Soil Preservation Ordinance, 1935, (Chap. 130) and for the purpose of this law, "building" is defined as "any house, tenement, room, farmhouse, store or other structure whereby any quantity of fertile soil is or might be permanently covered and withdrawn from cultivation and includes any public or private road or street, yard, court and any other enclosed space not devoted to agriculture". Previous to 1935 thousands of tons of good fertile soil had been buried under buildings and on the initiative of the late Dr. Micallef, then Superintendent of Agriculture, steps were taken to enact the necessary legislation to conserve our soil. From the inception of the scheme up to June, 1940, the Department dealt with 4424 building applications and 334,683 cubic yards of soil were saved to the Nation. With the entry of Italy into the war, building operations came to a standstill and for the ensuing war years the Department watched with dismay soil being buried or turned to other purposes owing to the stringent and relentless exigencies of the war when it became necessary for the Fighting Services to ignore the law as speed in construction was operationally essential.

(2) As far back as 1943 the Department re-opened the question of the Services complying again with the provisions of this Ordinance but, at the time, things were still unsettled. However, insistence on this matter resulted in obtaining at the first possible opportunity the fullest co-operation of the Service Departments concerned with constructional works which ensured the removal of fertile soil on the commencement of building operations.

(3) The enforcement of this law is no easy task and the section concerned has the unpleasant duty of summoning before the Law Courts any person who is found to be evading the law. The conservation of fertile soil has been one of the principal concerns of this Department and no opportunity has been lost to take legal action against offenders who deprive the community of its national heritage and to reiterate to all and sundry the impellent necessity of looking after our precious soil.

(4) The following figures show the amount of fertile soil which has been removed from building sites in terms of the Ordinance during the period 1943-47 :—

Year	Number of applications dealt with	Amount of soil removed in cubic yards
1943	47	3,131
1944	140	9,651
1945	106	7,987
1946	363	47,200
1947	837	57,694

(5) Further details on the working of the Fertile Soil Ordinance are contained in the reports by the Officer-in-charge Fertile Soil. (Vide Appendices "12" and "13").

38. General Survey of the Agricultural Year 1946-47.

(1) The rainfall for the Season 1946-47 has averaged 15 inches. The first showers amounting to less than one inch fell in September, and their incidence extended only to very few districts in Malta and Gozo. It was, however, in the early days of October that substantial rain fell generally in both Islands averaging to over two (2) inches, followed by a spell of dry weather. Heavy rains fell in December causing damage, to crops. Very little rain fell during the remaining winter months.

(2) The rainfall for the season was below average, only totalling 15 inches as compared with the seasonal average of around 22 inches. This small seasonal rainfall, following the low rainfall in the previous two years which averaged 18 inches has resulted in a serious shortage of water in these Islands. Fruit-trees, generally, suffered considerably from drought. The fact that the rainy season proper began later than usual resulted in a late vegetation of Autumn crops, but, despite the shortage of rainfall, particularly in the spring months, the Agricultural year in general was better than the two previous years and may be described as fairly satisfactory. Briefly, as regards the principal crops, cereals, beans, vetches and winter potatoes benefited by the even distribution of rain during October — January and the mild winter gave fairly good yields, whilst the spring potato crop was somewhat below average owing to the scarcity of late rains; onions, forages, grapes and summer crops, such as melons and tomatoes were the most unsatisfactory crops. Forages suffered from the early season droughts and vines, melons and tomatoes also gave poor yields since, following the third successive dry winter inadequate subsoil moisture was available for growth during the late spring and summer.

(3) Wheat was sown on an area of 4,902 acres as against 4,560 acres in the preceding year. The preparation of the land for wheat was favoured by the timely rains in early November and by the incidence of rain in December and January. The growth of the plant was satisfactory, but this advantage was partly discounted by the shortage of rain in spring, which prevented the full development of the plant and the ear. However, the cool weather which prevailed during April favoured the formation of the grain when it was approaching maturity, but on the whole the crop must not be considered as satisfactory. The total production amounted to 11,340 salms, equivalent to 2.3 salms or 18.4 bushels per acre, as against an estimated yield of 11.840 salms, equivalent to 2.6 salms or 20.8 bushels per acre during last year. Rainfall being below average and with the shortage of rain in February/April, the crop of wheat was also below average as compared with the average yield of 3.1 salms during the preceding ten years.

(4) Barley was cultivated on an area of 4,875 acres as compared with 4,845 acres last year. The former figure includes 1,177 acres of meslin or "mischiato" of which 1,176 acres were grown in Gozo. One acre of "Meslin" was sown in Malta as against 18 acres last year. This mixture is generally grown in Gozo where

farmers are keener on its cultivation. The crop of barley was not satisfactory, but better than the wheat crop; the total production amounted to 15,206 salms; viz:— 11,767 salms of barley and 3,439 salms of meslin, as against 13,370 salms of barley and 4,542 salms of meslin last year. This year's average yield per acre is 3.1 salms while the average yield of barley and meslin during the last year was 3.7 salms per acre. The total production of wheat, barley and meslin in the year under review, has therefore yielded 26,546 salms, as against a total production of 29,752 salms in the previous year.

(5) The area sown with vetches amounted to 1980 acres with a production of 1,672 salms or 0.84 quarters per acre. Last year's acreage was 2,165 acres and the yield was estimated at 5,845 quarters, viz:- 2.7 quarters per acre. The comparative figures of this year with those of the previous ten years, show that this year's production has decreased to one-third of the total of the last ten years. Owing to persistant drought, vetches grown on shallow soils, were fed to animals as green fodder.

(6) The area under broad beans amounted to 1,700 acres with a production of 3,132 salms, as compared with 2,010 acres and a yield of 5,423 salms in the previous year. While bean rust was far less prevalent than in previous years, broom-rape appeared on a large scale, but the comparatively low production is mainly attributable to excessive drought in spring. This heading does not include the area under broad beans, consumed green as a vegetable.

(7) The cultivation of the winter crop of potatoes covered an area of 3,767 acres, made up of 657 acres grown on irrigated and partly irrigated land and 3,110 acres on dry land, with a production of 2,065 tons and 4,503 tons respectively. The average yield was 1.7 tons per acre and the whole production totalled 6,568 tons. The corresponding figures for the previous year were 3,278 acres with an estimated yield of 6,510 tons or 2.0 tons per acre. Sufficient rains to start growth were not obtained in most districts until towards the end of October — rather later than usual. Subsequent weather conditions were favourable until strong N. E. Winds in mid-December caused severe damage to the plants. However, in many districts the potato plants which had reached their full growth and were promising were almost destroyed before the tubers had time to reach development.

(8) Spring potatoes were grown on an area of 4,582 acres with a production of 8,834 tons. Last year's corresponding figures were 5,270 acres and 9,630 tons. From this year's total acreage, 972 acres were cultivated on irrigated land and 3,610 acres on dry land. The yield was 3,907 tons and 4,933 tons respectively, equivalent to 4.02 tons per acre on irrigated land and 1.37 tons per acre on dry land; viz:— 1.9 ton per acre on the total production which is very low as compared with the average yield per acre of 3 tons in the preceding ten years. The main varieties of the imported seed were:— Arran Banner, Up-to-Date, Ulster Commerce, Alpha and Kerr's Pink, which with the exception of the "Ulster Commerce" variety are of the white flesh type. The first two named varieties are heavy croppers in these Islands and form the outstanding features of all seed imports. The condition of the seed on arrival was very satisfactory, the seed showing only a small percentage of wastage due to blight and wet rot. Germination was satisfactory, and only a few gaps through failures of sets were observed. Plantings took place under favourable conditions and nearly all the imported seed was sown. As regards weather conditions during growth, the governing factor was the great shortage of rainfall. However, owing to the excessively dry-weather, the danger of potato-blight was wholly averted, although on the other hand the deficiency of moisture in the soil was far from favourable to the proper development of the tuber, consequently, the crop reaped was generally much below average. The shortage of rain in spring and the mild weather conditions in winter favoured considerably the appearance of the potato moth. Infestation became extensive with spring crop potatoes by the end of May, particularly with the non-irrigated crop.

(9) The area under onions consisted of a total of 922 acres of which 188 acres were cultivated for consumption as green and are accounted for under green vegetables. The dry crop which consisted of 734 acres yielded 1,892 tons. The corresponding figures in 1945-46 were 973 acres of which 807 acres were left for the dry crop producing 2,455 tons. Onions are mostly planted out in January and early February, and although the shortage of rain must have affected the total production in weight this drawback was compensated by the absence of disease. The average yield per acre was 2.5 tons as compared with an average yield of 5.6 tons per acre during the preceding ten years.

Five types of onions are grown locally, of which the early round yellow type, which is mostly cultivated in the Eastern district is, primarily grown for export. The early White type, grown mostly in the Central district around Żebbuġ, is produced for home consumption; trials with this sort of onion for export, were made before the war, with good results; the other types, which constitute the bulk of the crop, consist of the late or long-keeping type onions, of a round or flattish yellow type and the yellow round or pear-shaped. These late onions are grown chiefly in the neighbourhood of Rabat. Dingli and Siġġiewi. Except for the pear-shaped yellow type from Siġġiewi which is exported late in the season, the other two varieties are consumed locally. 250 tons of onions were exported to the United Kingdom from the year's crop.

(10) The year was less favourable for the production of forages. Notwithstanging the prevailing drought, sulla grown on fertile soil made fine shoots with slender stems and healthy foliage, while caterpillar plant was free from disease. Their harvesting and drying were carried out throughout under favourable conditions.

Forages were grown on 7,690 acres, against 8,765 acres in the preceding year. However, the produce was 324,470 loads of ten bundles each, against 368,300 loads last year. This heading includes sulla with an acreage of 7,215 acres and a yield of 307,812 loads; caterpillar plant with an area of 442 acres and a yield of 16,658 loads. The germination of sulla and caterpillar plant was rather late, owing to the delayed rainy season, but the development of the plants favoured by the mild winter and the fair distribution of rain proceeded satisfactorily, and resulted in a produce, although not abundant in quantity, fine in quality. In addition 2,109 acres were under green fodder, of which 1,721 acres under barley, 359 under clover and 29 under caterpillar.

(11) The area under vegetables including dry-farmed vegetables, consisted of 4,630 acres, with a production of 224,188 cwts: as against last year's 3,930 acres and 272,500 cwts. This shows a decrease in production as compared with last year's yield, but an increase in area. The considerable decrease in the production of vegetables over that of last year is explained by the fact that the area under dry-farmed cauliflowers and cabbages which are heavy croppers was smaller. Many of the plants died before useful rains fell in early October, after which a spell of dry weather followed which affected badly the surviving plants. On the whole vegetables were in short supply in comparison to the demand and, consequently, steady prices were maintained.

(12) Although no rainfall was recorded during the spring of 1946 to leave a residual subsoil moisture on which the non-irrigated summer crop of tomatoes rely, returns under tomatoes showed a total area of 1,825 acres with a production of 75,850 cwts. viz:—1,572 acres were grown on dry-farmed land with a yield of 56,076 cwts; and 253 acres were cultivated on irrigated land with a yield of 19,774 cwts: Last year's corresponding figures were 1,581 acres of which 218 acres were irrigated and 1,363 acres were dry-farmed. The production was 67,000 cwts. of which 19,340 cwts. from irrigated land and 47,660 cwts. from dry-land. This year as in the previous one, tomato plants suffered from excessive heat during summer, causing the death of many plants and reducing considerably the production of the surviving ones.

(13) Melons and Water Melons were cultivated on an area of 1,195 acres, of which 442 acres were grown in Gozo; the total production was estimated at 36,345 cwts: The corresponding figures last year were 496 acres grown in Gozo and 455 acres grown in Malta with a total production of 29,000 cwts: Although acreage was increased during 1947 the average yield of 30.5 cwts. per acre was identical to that of the previous year.

(14) The acreage under vineyards was returned at 3,050 acres with a yield of 93,239 cwts: Last year's acreage was recorded at 2,985 acres with a production of 84,400 cwts: The average yield of 29.2 cwts. per acre, this year, is very poor, as compared with an average yield of 50.9 cwts. in the preceding ten years. The acreage of 3,050 includes 460 acres of vines not yet under production.

(15) The acreage under citrus fruit has been considerably reduced owing to a possible fungoid disease which it is believed found favourable conditions during the persistent drought. The returned acreage stood at 158 acres as against 195 acres during the year 1946. The estimated yield during 1947 amounted to 142,500 dozen as against 190,000 dozen during 1946. The average yield per acre amount to 900 dozen as against 941.6 dozen during the preceding ten years.

(16) The area under fruit trees for the year under review was returned to 546 acres. In this year's acreage the area of other fruits, other than stone fruits, is not included. The yield amounted to 22,088 cwts : with an average yield of 40.3 cwts : per acre, as against 42,350 cwts : in the preceding year, and an average yield of 60.6 cwts : during the last ten years. Fruit trees suffered considerably from deficient rainfall during three consecutive seasons.

39. **Special Reports.**

This Report includes the following special reports on the work of the various branches of the Department, viz :—

(a) Report on the Government Farms by the Superintendent of Government Farms and Agricultural Organiser for the years 1938-46 — Appendix 1.

(b) Report on the Government Farms by the Superintendent of Government Farms and Agricultural Organiser for the year 1946-47 — Appendix 2.

(c) Report on Public Gardens, Plantations and Nurseries by the Superintendent of Public Gardens for the years 1938-46 — Appendix 3.

(d) Report on Public Gardens, Plantations and Nurseries by the Superintendent of Public Gardens for the year 1946-47 — Appendix 4.

(e) Report on Plant Pathology by the Plant Pathologist for the year 1938-46 — Appendix 5.

(f) Report on Plant Pathology by the Plant Pathologist for the year 1946-47 — Appendix 6.

(g) Report on the Veterinary Services by the Principal Government Veterinary Surgeon for the years 1938-46 — Appendix 7.

(h) Report on the Veterinary Services by the Principal Government Veterinary Surgeon for the year 1946-47 — Appendix 8.

(i) Report on the activities of the Branch Office, Gozo, by the Agricultural Officer, Gozo for the years 1938-46 — Appendix 9.

(j) Report on the activities of the Branch Office, Gozo by the Agricultural Officer, Gozo, for the year 1946-47 — Appendix 10.

(k) Report on Seed Production by the Horticultural Officer for the years 1942-47. — Appendix 11.

(l) Report on Fertile Soil Preservation by the Soil Engineer for the Calendar years 1939-46 — Appendix 12.

(m) Report on Fertile Soil Preservation by the Soil Engineer for the Calendar year 1947 — Appendix 13.

(n) Report on the Agricultural Census & Survey by the Officer in Charge, Census & Survey for the years 1942-46 — Appendix 14.

(o) Report on the Agricultural Census & Survey by the Officer in Charge, Census & Survey for the year 1946-47 — Appendix 15.

40. **Statistical Tables**

The following is a list of tables attached to the Director's Report :—

Table 1 — Actual Revenue for the financial years 1945-46 and 1946-47.

Table 2 — Actual Expenditure for the financial years 1945-46 and 1946-47.

Table 3 — Population of the Maltese Islands and Territorial Area.

Table 4 — Rainfall.

Table 5 — Acreage under main crops.

Table 6 — Yield of main crops.

Table 7 — Estimated value of main crops.

Table 8 — Livestock population, slaughterings at the Civil Abattoirs and ruling wholesale prices of meat.

Table 9 — Quantities and values of Imports of items of Agricultural interest.

Table 10 — Quantities and values of Exports of items of Agricultural interest.

Table 11 — Acreages and yields of the principal crops in 1947 as compared with the average acreages and yields during the preceding ten years.

Table 1. Statement of Actual Revenue for 1945-46 as compared with Revenue for 1946-47.

Head and Item of Revenue	1945-46	1946-47	Increase	Decrease
	£	£	£	£
FEES OF OFFICE				
27. Abattóir Fees	4,013	6,546	2,533	...
29. Licences, Certificates, etc.	270	93	...	177
65. Sale of Vegetables from Government Farm	303	316	13	...
66. Sale of Livestock from Government Farm	7,929	2,422	...	5,507
67. Sale of Dairy Produce	535	422	...	113
68. Sale of Vines, rootlings, etc. from vine nurseries	187	365	178	...
69. Sale of trees, plants, etc. from Public Plantations	280	317	37	...
70. Sale of Fruits from Sant Anton Gardens...	1,246	920	...	326
71. Sale of Fruits from Buskett Gardens ...	2,559	1,704	...	855
72. Sale of Fruits from Dar-il-Ljuni ...	317	206	...	111
73. Sale of Chemicals, hire of Spraying Pumps, etc.	22	40	18	...
74. Sale of Hatching Eggs and Poultry from Wied Incita Poultry Farm	3,624	2,373	...	1,251
75. Seed Production. Proceeds of sale of seeds	5,739	4,537	...	1,202
76. Sale of Honey	58	30	...	28
77. Commission on sales through Pitkali Markets	11,122	16,167	5,045	...
Inspection of Agriculture Produce ...		39	39	...
Miscellaneous Reimbursements	775	1,923	1,148	...
Contributions under W. & O Pension Act ...	230	359	129	...
Miscellaneous Receipts	1,268	802	...	466
	40,477	39,581	9,140	10,036

Table 2. Statement of Actual Expenditure for 1945-46 as compared with the Expenditure for 1946-47.

Head and Subhead of Expenditure	1945-46	1946-47	Increase	Decrease
	£	£	£	£
A. Personal Emoluments	14,887	16,676	1,789	...
B. Other Charges.				
General Service				
1. Transport	788	651	...	137
2. Stationery, bookbinding and publications ...	150	146	...	4
3. Water supply, lighting and electric current and telephone...	215	213	...	2
4. Incidental Expenses	46	69	23	...
5. Uniforms	148	125	...	23
6. Stamps and other expenses i.c.w. Workmen's Compensation Ordinance	133	150	17	...
7. Rent	104	124	20	...
8. Expenses i.c.w. Fertile Soil Ordinance ...	212	223	11	...
9. Compilation of Statistics	247	235	...	12
10. Expenses of Agricultural Survey ..	...	332	332	..
11. Agricultural Propaganda	410	355	...	55
12. Fees to Unofficial Members of Agricultural Board	...	96	96	...
Purchase of a Car	...	400	400	...
Printing of a Study on the Workings of Co-operative Societies	...	37	37	...
Hiring of threshing machines to farmers ...	806	1,082	276	...
Government Farms				
13. Maintenance etc. of Government Farm and Stock Station	8,943	8,498	...	445
14. Water, lighting and electric current ...	349	242	...	107
15. Expenses i.c.w. Agricultural Parish Committees	31	26	...	5
16. Rent of premises used as Store, Gozo ...	4	4	...	...
17. Premium to breeders of licensed pedigree stock	103	230	127	...
18. Coal	7	75	68	..
19. Subsidies and grants to bee-keepers and appliances Restocking of pigs	59	...	...	59
	1,236	215	..	1,021
Expenses i.c.w. the production of wine ...	231	71	...	160
Viticulture and Oenology				
20. Maintenance of vine nurseries, etc. in Malta and Gozo	497	399	...	98
21. Maintenance of experimental vineyards ..	85	100	15	...
22. Expenses i.c.w. Oenology including Maintenance of Laboratory	25	1		24
Gardens and Plantations				
23. Maintenance etc. of Public gardens, nurseries and plantations	2,286	2,277	...	9
24. Maintenance of public gardens and farm lands at Buskett	925	976	51	...
25. Maintenance etc. of Sant Anton and Verdala private gardens	303	304	1	...
26. Water supply to gardens and vine nurseries	131	263	132	...
27. Maintenance of gardens at Dar-il-Ljuni ...	246	245	..	1
28. Planting trees in Malta and Gozo ...	145	150	5	...
Plant Pathology				
Control of Plant Diseases and insect pests ...	1,108	1,003	...	105
Marketing				
Expenses i.c.w. exports of Agricultural Produce	438	139	...	299
Carried forward ...	35,298	36,132	2,400	2,566

Table 2. Statement of Actual Expenditure for 1945-46 as compared with the Expenditure for 1946-47—continued.

Head and Subhead of Expenditure	1945-46	1946-47	Increase	Decrease
	£	£	£	£
B. Other Charges.—*cont.*				
Brought forward ...	35,298	36,132	3,400	2,566
Veterinary Services.				
Maintenance of Slaughterhouses	276	338	62	...
Supply of ammunition and humane killers ...	15	128	113	...
Coal and other fuel	643	937	294	...
Prevention of animal diseases	1,165	1,782	617	...
Removal of offal	32	33	1	...
Water supply, lighting and electric current ...	31	75	44	...
Maintenance and transport of horse ambulance ...	3	23	20	...
Employment of substitutes, extra labour, etc. ...	20	107	87	...
Training of Assistant Government Veterinary Surgeon in United Kingdom	...	262	262	...
Replacement of Meat Stamping Apparatus ...	...	50	50	...
Purchase of a typewriter	...	23	23	...
Subsidies.				
Agricultural Shows	409	730	321	...
MSPCA (including Maintenance of the Dogs' Home)	220	220	...	...
Imperial Bureau of Agriculture	170	170	...	...
C. Special Expenditure.				
Seed Production	7,487	7,955	468	...
Distribution of animal feedingstuffs	2,360	3,357	997	...
Purchase of seed cleaning equipment	215	...	...	215
D. Pitkali Markets.				
A. Personal Emoluments	5,605	7,105	1,500	...
B. Other Charges.				
Transport	626	898	272	...
Rents	326	185	...	141
Telephone, Water and Electricity	356	333	...	23
Stationery	869	762	...	107
Incidentals	364	363	...	1
	56,490	61,968	8,531	3,053

Table 3. I. Population of the Maltese Islands

Last Census Sunday, 26th April, 1931.

No. of Inhabitants 241,621.

Estimated Population :—

Year	Number of Inhabitants On the 31st December or 1st January of the following year.
1939	269,912
1940	270,755
1941	271,359
1942	269,090
1943	272,121
1944	279,187
1945	286,596
1946	295,247
1947	303,234

II. Territorial Area

Total : Territorial Area	**121.844 Sq. miles or 77,980 acres**
(Malta)	94,870 Sq. miles or 60,717 acres
(Gozo)	25,899 Sq. miles or 16,575 acres
(Comino)	1,075 Sq. miles or 688 acres
	121,844 Sq. miles or 77,980 acres

Table 4. Table showing the incidence of rainfall (in inches) for the ten years ended 1946/47.

— YEAR —

	1937-38	1938-39	1939-40	1940-41	1941-42	1942-43	1943 44	1944 45	1945-46	1946-47
Malta	26.34	19.09	19.95	16.88	25 59	25.29	22.59	15.81	13.85	14.97
Gozo	18 92	15 86	19.43	12.72	23.53	19.37	23 70	12.07	13.66	15.72
Kemmuna	10 64	17.34	16.86	16.12	26.69	18.28	20.21	8.93	11.29	11.67
Mean for Malta, Gozo & Kemmuna	18.63	17 43	18 75	15.24	25.27	20. 8	22.17	12.27	12.93	14.12

Table 5. Estimated acreage of main crops during the period 1938-39 to 1946-47.

Crop	— Acreage —								
	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46	1946-47
Wheat	9,504	9,920	5,500	3,815	6,995	51,76	4,597	4,560	4,902
Maize	252	305	250	250	454	337	250	—	—
Barley and Meslin	4,947	5,385	4,000	3,631	5,640	4,708	4,197	4,845	4,874
Vetches	2,837	2,691	2,500	2,465	2,645	3,330	3,579	2,165	1,980
Sulla									
Barley (Green Feed) ...	9,319	9,582	9,300	6,584	7,658	8,853	9,674	8,765	7,690
Caterpillar plant									
Broad Beans	1,979	1,615	1,000	1,650	1,404	1,826	2,262	2,010	1,700
Potatoes:—									
Spring Crop	5,140	5,290	3,000	1,413	3,892	4,772	4,452	5,270	4,582
Summer Crop	290	190	100	846	302	470	295	61	—
Winter Crop	3,330	3,440	1,500	1,620	1,260	2,300	3,514	3,278	3,767
Melons	790	640	700	880	1,484	1,112	983	951	1,195
Onions	1,410	985	11,00	950	885	655	865	807	734
Tomatoes	1,100	560	800	1,732	2,748	1,967	1,800	1,581	1,825
Other Vegetables	2,350	2,030	2,150	3,520	6,430	5,934	5,200	3,930	4,630
Ginned Cotton	48	45	30	30	25	9	1	—	—
Cotton Seed	—	—	—	—	—	—	—	—	—
Tobacco	24½	12	—	—	—	—	—	—	—
Cumin Seed	1,100	1,125	—	10	5	3	4	3	4
Grapes	2,206	2,298	3,000	1,073	3,150	3,117	3,146	2,985	3,050
Citrus Fruit	196	196	195	195	195	195	195	195	158
Other Fruit	1,090	1,080	980	872	980	1,240	1,240	770	546
Total ...	47,861½	47,339	36,105	31,536	46,152	46,004	46,254	42,176	41,637

Table 6. Estimated yield of main crops during the period of 1938-39 to 1946-47.

Crop	— Yield —								
	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46	1946-47
Wheat	34,890 qrs.	25,020 qrs.	20,000 qrs.	7,370 qrs.	25,100 qrs.	11,600 qrs.	12,410 qrs.	11,840 qrs.	11,340 qrs.
Maize	500 „	590 „	500 „	312 „	600 „	1,650 „	676 „	—	—
Barley and Meslin	24,545 „	14,690 „	18,000 „	7,190 „	27,500 „	14,470 „	22,660 „	17,912 qrs.	15,206 qrs.
Vetches	10,455 „	8,060 „	8,000 „	5,395 „	6,500 „	8,230 „	8,725 „	5,845 „	1,672 „
Sulla									
Barley (green feed)	645,145 loads	614,730 loads	600,000 loads	521,325 loads	420,000 loads	487,000 loads	525,000 loads	368,300 loads	324,470 loads
Caterpillar Plant									
Broad Beans	7,345 qrs.	3,590 qrs.	3,000 qrs.	1,963 qrs.	5,850 qrs.	6,675 qrs.	4,070 qrs	5,423 qrs.	3,132 qrs.
Potatoes:-									
Spring Crop	20,300 tons	18,200 tons	6,000 tons	4,955 tons	7,600 tons	12,935 tons	10,480 tons	9,630 tons	8,834 tons
Summer Crop	1,155 „	1,000 „	400 „	3,425 „	590 „	1,275 „	695 „	114 „	—
Winter Crop	9,500 „	10,500 „	2,500 „	5,200 „	1,440 „	4,500 „	6,040 „	6,510 „	6,568 tons
Melons	47,485 cwts	40,920 cwts.	42,500 cwts.	51,495 cwts.	96,200 cwts.	74,000 cwts	54,000 cwts.	29,000 cwts.	36,345 cwts.
Onions	13,010 tons	5,750 tons	7,500 tons	5,750 tons	7,460 tons	1,800 tons	2,460 tons	2,455 tons	1,892 tons
Tomatoes	107,840 cwts.	50,350 cwts.	55,000 cwts.	97,380 cwts.	233,500 cwts.	169,670 cwts.	60,940 cwts.	67,000 cwts.	75,850 cwts.
Other Vegetables	174,210 „	152,255 „	165,000 „	185,630 „	325,000 „	300,000 „	445,000 „	272,500 „	224,188 „
Ginned Cotton	11,200 lbs.	10,700 lbs.	7,500 lbs.	6,700 lbs.	5,050 lbs.	1,900 lbs.	180 lbs.	—	—
Cotton Seed	224 cwts.	215 cwts.	150 cwts.	70 cwts.	60 cwts.	20 cwts.	—	—	—
Tobacco	196 „	75 „	—	—	—	—	—	—	—
Cumin Seed	4,750 „	5,500 „	—	45 cwts.	25 cwts.	12 cwts.	22 cwts.	15 cwts.	17 cwts.
Grapes	117,660 „	78,115 „	100,000 cwts.	85,650 „	157,500 „	156,000 „	212,400 „	84,400 „	89,239 „
Citrus Fruit	162,840 dozen	166,415 dozen	180,000 dozen	190,000 dozen	240,120 dozen	185,000 dozen	210,000 dozen	190,000 dozen	142,500 dozen
Other Fruit	60,560 cwts.	72,435 cwts.	65,000 cwts.	65,300 cwts	64,500 cwts.	54,000 cwts.	52,780 cwts.	42,350 cwts.	22,008 cwts.

Table 7. Estimated value of main crops during the period 1938-39 to 1946-47.

Crop	— Value — (to the nearest hundred pounds)								
	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46	1946-47
	£	£	£	£	£	£	£	£	£
Wheat	43,600	100,100	120,000	103,200	225,900	92,800	161,300	118,400	107,200
Maize	600	1,000	1,000	7,500	12,000	19,800	8,700	–	—
Barley and Meslin	20,400	45,100	68,600	64,100	164,000	63,800	159,000	88,600	90,900
Vetches	14,800	18,100	48,000	215,800	130,000	65,800	106,900	52,600	18,400
Sulla	112,900	184,400	300,000	391,000	280,000	321,600	380,600	349,200	258,100
Barley (green feed)									
Caterpillar Plant									
Broad Beans	11,000	7,200	21,000	98,100	175,500	80,100	57,000	54,200	38,100
Potatoes:—									
Spring Crop	119,100	116,500	229,200	253,700	316,200	227,700	201,200	123,300	235,600
Summer Crop	6,900	7,400	15,300	175,400	14,500	22,400	13,300	1,500	—
Winter Crop	42,700	44,600	64,000	133,100	124,300	115,200	193,300	125,000	140,100
Melons	17,800	20,500	35,400	106,900	102,600	61,700	59,400	32,600	32,600
Onions	19,500	18,400	48,000	120,400	143,200	15,700	15,700	7,900	27,400
Tomatoes	15,300	9,200	11,500	67,900	225,700	113,100	48,800	64,300	121,360
Other Vegetables	78,400	79,900	107,200	143,900	316,900	277,500	400,500	227,100	223,300
Ginned Cotton	300	400	300	400	400	100	—	—	—
Cotton Seed	100	200	100	100	—	—	—	—	—
Tobacco	700	300	—	—	—	—	—	—	—
Cumin Seed	9,100	7,000	—	100	100	100	100	100	200
Grapes	52,900	49,800	72,500	233,400	275,600	124,800	509,800	135,000	226,500
Citrus Fruit	4,700	16,600	27,000	23,700	78,000	41,600	36,700	31,700	23,300
Other Fruit	25,700	54,300	53,600	71,800	80,600	56,700	47,500	101,600	76,200
Total	596,500	781,000	1,222,700	2,210,500	2,665,500	1,700,500	2,399,800	1,513,100	1,619,260

Table 8. Livestock Population during the period 1939 to 1947.

Class of Livestock	Estimated 1939 (31st December)	Census 1940 (5th July)	Census 1941 (12th January)	Census 1942 (1st January)	Census 1943 (March-April)	Census 1944 (March-April)	Census 1945 (March-April)	Census 1946 (February)	Census 1947 (Nov.-Dec.)
Cattle	3,569	4,901	3,646	3,524	2,505	3,073	3,720	3,851	2,676
Horses	3,325	4,321	4,272	4,131	3,550	3,799	3,458	3,418	3,313
Asses	3,415	7,373	7,024	6,661	3,444	3,541	3,481	3,309	3,551
Mules	2,589				2,589	2,680	2,611	2,591	2,502
Sheep	18,628	25,860	26,768	34,592	20,105	24,389	29,361	30,003	22,675
Goats	41,758	69,282	66,904	66,296	40,867	39,963	50,760	60,730	53,184
Pigs	9,969	19,224	17,164	19,654	2,593	7,294	20,001	22,768	16,237

Livestock Slaughterings and ruling average Wholesale Prices of Meat at the Civil Abattoirs during the period 1939 to 1947.

Class of Livestock	1938-39	1939-40	1940-41	1941-42	1942-43	1943-44	1944-45	1945-46	1946-47
Bred locally:—									
Bovines	810	703	890	1,644	536	530	1,125	4,512	1,753
Swine	27,463	33,019	20,798	21,835	1,104	6,277	13,171	19,758	11,252
Ovines	8,873	9,952	11,632	10,472	5,669	6,259	8,727	11,732	12,907
Caprines	9,947	12,586	17,933	24,938	10,924	6,611	8,652	11,031	20,939
Equines	658	1,094	948	571	422	148	129	200	765
Imported:—									
Bovines	13,763	7,569	1,173	100	5	7	11	4,303	6,737
Swine	—	—	—	—	—	—	—	886	1,822
Ruling wholesale prices of meat per qantar:—									
Bovines	£5 10 0	£10 10 0	£21 0 0	£19 0 0	£27 to £28	£20 0 0	£40 0 0	£30 0 0	£28 0 0
Swine	4 10 0	7 0 0	15 0 0	14 0 0	£22 0 0	22 0 0	26 5 0	20 0 0	29 0 0
Ovines	4 15 0	6 0 0	13 0 0	9 0 0	16 0 0	16 0 0	12 10 0	13 0 0	14 0 0
Caprines	3 10 0	5 0 0	12 10 0	9 0 0	16 0 0	16 0 0	8 0 0	11 0 0	11 0 0
Equines	3 0 0	4 15 0	10 0 0	17 10 0 †	12 0 0 †	12 0 0 †	7 10 0	5 10 0	5 0 0

† During the years 1942 and 1943 prices were controlled by the Subsidies Meat Scheme established by Order No. 19 of the 23rd June, 1942 by the Director of Agriculture.

Table 9. Quantities and Values of Imports of Items of Agricultural Interest
(Annual Customs Trade Returns — 1939 to 1940 and 1943 to 1947)
— Records for 1941 and 1942 were lost through enemy action —

Item	Unit	1939		1940		1943		1944		1945		1946		1947	
			£		£		£		£		£				£
CLASS I															
FOOD AND DRINK:—															
ANIMALS LIVING:—															
Bullocks	Cwts.	65,053	95,222	27,014	64,558	—	—	—	—	—	—	—	—	19,545	144,852
Sheep	,,	—	—	—	—	—	—	—	—	—	—	—	—	640	2,592
Swine	,,	—	—	—	—	—	—	—	—	—	—	—	—	2,288	26,831
Butter and Substitutes ...	,,	18,650	68,661	12,169	39,894	23,230	92,065	24,842	43,260	36,771	106,513	56,017	195,620	33,030	220,246
Cheese	,,	15,033	64,904	4,489	22,001	22,743	212,500	28,507	147,504	15,023	500 713	13,550	112,000	16,533	170,095
Eggs in Shell	Dozen	603,018	19,059	150,060	3,121	10,134	420	—	—	77,332	11,682	224,505	20,807	458,648	62,975
Eggs Dried	Cwts.	22	4	192	49	3,468	87,064	1,712	34,067	2,026	39,515	1,311	28,319	859	13,752
Fruit	—	—	56,368	—	34,416	—	58,381	—	203,721	—	130,137	—	207,708	-	38,631
Wheat	Tons	53,516	203,531	20,237	171,755	17,797	498,316	36,918	701,442	45,430	1,163,093	66,417	1,300,596	33,252	918,132
Meat (Fresh, Frozen & Pres.)	Cwts.	42,132	134,662	13,100	39,910	96,544	500,886	72,508	345,785	118,685	617,250	129,555	545,533	80,398	432,809
Milk	—	—	160,536	—	38,826	-	159,295	—	93,757	-	145,125	-	455,190	-	55,581
Olive Oil	Galls.	13,908	4,560	5,685	2,232	—	-	23	24	9	3	2,833	1,391	1,280	3,000
Potatoes	Cwts.	66,086	24,210	59,859	26,774	3	7	12,747	12,616	-		93,614	87,226	73,460	61,432
Pulse	,,	2,892	2,495	3,492	4,068	21,483	47,771	13,965	16,160	15,301	34,204	13,689	34,332	1,340	6,352
Rice	,,	28,033	11,029	8,735	6,411	24,641	26,508	44,770	21,122	10,502	10,454	14,411	29,861	7,000	11,004
Tomato Sauce & Extracts ...	,,	2,896	6,085	222	666	13	80	170	281	191	537	4,991	22,355	67,190	56,334
Vegetables (excl. Potatoes)	—	-	19,210	—	10,715	—	4,282	--	51,988	-	47,441	-	75,824		50,113
Wines	Galls.	1,126,616	54,004	633,717	36,877	2,857	2,591	1,313,823	275,228	1,411,613	348,754	1,419,795	450,403	1,604,535	395,406
CLASS II															
RAW MATERIALS:—															
Fertilizers	Cwts.	—	5,694	—	1,957	—	—	—	—	—	—	—	—	—	16,822
Chemicals	I. Galls.	—	2,764	—	—	—	—	—	—	—	—	—	—	—	—
CLASS IV															
MISCELLANEOUS:—															
Donkeys	No.	—	—	—	—	--	—	—	—	—	—	204	1,261	959	3,899
Horses	,,	104	1,132	5	178	—	—	—	—	—	—	810	23,750	332	12,674
Mules	,,	19	130	—	—	—	—	—	—	—	—	212	5,855	80	2,548
Unenumerated	,,	—	629	--	44	—	9	—	—	—	—	—	1,001	—	803
CATTLE FOOD:—															
Barley	Cwts.	161,577	38,092	40,160	16,914	168,020	97,171	111,071	136,275	110,133	180,033	152,200	203,137	* 20,240	34,514
Beans	,,	603,916	189,357	104,425	46,770	24	19	31,483	42,816	230,193	428,670	365,069	493,023	178,060	290,251
Bran	,,	94,064	23,536	5,082	1,557	1,471	1,000	8,655	11,771	—	—	64,239	48,334	* 6,480	6,575
Caravances	,,	68 345	29,870	22,430	15,106	3,911	7,680	15 676	21,108	84,536	109,152	43,200	64 017	* 59,160	61,380
Carob Beans	,,	15,645	20	4,418	8	-	—	31,710	18,516	30,056	13,260	13 680	10,061	6,240	7 824
Cotton Seed	,,	75,687	19,940	19,100	7,188	—	—	54.609	44,271	3,039	3,888	38,916	24,907		
Indian Corn	,,	50,270	13,632	65,200	25,048	120	51	9,076	14 660	45,630	74,219	46,102	69.150	* 18,580	24,544
Ground Nuts	,,	4,180	2,837	1,025	996	—	—	—	—	—	-	—	-	500	2,440
Hay	—	—	1,725	—	8	—	—	—	—	—	-	-	-	-	2,003
Saggina...	Cwts.	91,629	29,752	88,164	37 448	—	—	12,465	17,736	20,000	36,562	84.949	127,173	58,540	93,994
Unenumerated	—	—	5,008	—	3,513	—	441	—	7,017	—	11,423	--	46,693	—	10,212

NOTE: * The following amounts of Cattle Food were also imported during 1947. No figures of value are available:—

1. Barley 58,960 Cwts. 2. Bran 6,520 Cwts. 3. Caravances 69,060 Cwts. 4 Indian Corn 640 Cwts.

Table 10. Quantities and Values of Exports of Items of Agricultural Interest

(Annual Customs Trade Returns — 1939 to 1940 and 1943 to 1947)

— Records for 1941 and 1942 were lost through enemy action —

Item	Unit	1939		1940		1943		1944		1945		1946		1947	
			£		£		£		£		£		£		£
CLASS I															
FRUITS & VEGETABLES															
Onions	cwts.	118,128	19,203	214	42	—	—	—	—	—	—	—	—	—	—
Oranges & Mandarines	dozen	2,166	154	464	46	—	—	—	—	—	—	—	—	158	27
Potatoes (table)	tons	15,190	123,587	10,147	108,508	—	—	—	—	416	16,082	916	19,761	2,051	66,725
Tomatoes (Preserved)	—	—	210	—	—	—	—	—	—	—	—	—	—	—	—
Wine in casks	gallons	915	83	—	—	—	—	—	—	—	—	—	—	—	—
CLASS II															
RAW MATERIALS															
Bones & Hoofs	cwts.	2,111	287	—	—	—	—	—	—	—	—	2,151	1,140	—	—
Cumin Seed	,,	4,026	8,338	1,463	4,519	225	861	163	932	1,938	10,525	121	892	487	1,575
Hides & Skins	,,	5,168	10,589	3,729	10,649	1,903	14,192	301	2,302	1,941	21,140	2,466	22,315	166	6,518
Horses' Hair	,,	—	—	—	—	—	—	—	—	—	—	—	—	20	143
Wool	,,	20	94	—	—	—	—	—	—	—	—	10	42	20	88
Sulphur (in powder)	,,	4,787	1,892	2,305	1,231	—	—	—	—	—	—	—	—	—	—
Tallow	,,	1,000	395	1,122	1,694	—	—	—	—	—	—	—	—	—	—
CLASS IV															
MISCELLANEOUS															
Beans	tons	—	—	—	—	—	—	—	—	—	—	—	—	6	694
Bran	cwts.	13,139	2,996	—	—	—	—	—	—	—	—	263	2,650	—	—

Table 11. Acreages and Yield of the principal crops in 1947 as compared with the averages and yields during the preceding ten years.

Crop	Total Acreage 1947	Average acreage preceding ten years	Total Yield 1947	Yield per acre, 1947	Average yield per acre preceding ten years
Wheat	4,902	6,924	11,340 qrs.	2.3 qrs.	3.1 qrs.
Barley	3,697	4,750	11,767 qrs.	3.2 qrs.	3.9 qrs.
Beans	1,700	1,759	3,132 qrs.	1.8 qrs.	3.0 qrs.
Vetches...	1,980	2,757	1,672 qrs.	.84 qrs.	3.0 qrs.
Spring Potatoes	4,582	4,455	8,834 tons	1.9 tons	3.0 tons
Onions	734	1,064	1,839 tons	2.5 tons	5.6 tons
Citrus Fruits	158	195	142,500 dozen	901.9 dozen	941.6 dozen
Grapes	2,626	2,496	89,239 cwts.	33.9 cwts.	50.9 cwts.
Other Fruits	788	1,050	31,762 cwts.	40.3 cwts.	60.6 cwts.
Vegetables	4,630	3,605	224,188 cwts.	48.5 cwts.	67.0 cwts.
Forages	7,690	8,662	324,470 some	42 some	59.4 some

APPENDIX 1.

Report by the Superintendent of the Government Farm and Agricultural Organizer for the period October 1938-September 1946.

LIVESTOCK

Cattle. Most of the cows were killed by enemy action whilst grazing at Marsa Sports Ground; those which survived were fed on scanty rations during the siege with a consequent deterioration of their condition and that of their progeny.

Three Kerry heifers presented to Malta by a well known Eire breeder, Mr. Maude, arrived in June 1944. An attempt to introduce this breed in the past failed, as farmers have a preference for large sized cattle.

Early in June 1944, foot and mouth disease appeared in the country. This outbreak retarded restocking and still reduced the number of cattle in these Islands. The Government Farm lost four bulls, eight cows and four heifers through this epizootic.

Pigs. Due to the abnormal scarcity of fodder, pig rearing was greatly reduced in extent. With the object of restocking, a large building at Marsa previously used as stables was requisitioned to house breeding sows. Boxes were adapted as pig sties and many other improvisations were made to breed as large a number of boars and sows as possible which were fed mainly on deteriorated foodstuffs. When this centre was closed down 906 pregnant gilts had been sold to bona fide farmers for breeding purposes.

Even in this case restocking was handicapped by an outbreak of swine fever simultaneously with the foot and mouth epidemic. Many farmers lost all their pigs through infection which spread all over the Island. The Government Farm lost 356 pigs of which 152 were sucklings. Fortunately the Marsa Pig Breeding Centre could be effectively isolated and no losses through this disease occurred there.

Goats. Through the initiative of the British Goat Society and the generosity of the members a consignment of 5 British Saanen Billy Goats were received from U.K. followed by two others two months later. It is regretted that no she goats of the breed could be imported. As a result no pure bred progeny was available later and moreover, the reaction to environment of the pure breed could not be observed.

Maltese goatmen are very conservative; they are reluctant to mate their goats with billies of a new breed and as a result the number of services performed by the Saanen Billy Goats in Malta was limited. Gozitan herdsmen were however more alive to the potentialities of the breed and full use was made of the imported sires.

Plans have been formulated for the construction of a modern goatery at Wied Incita with the object of improving the local breed. Simultaneously with selection it was proposed to resume research work on goat immunization against Brucellosis. The improvement of the Maltese goat requires immediate attention indipendently of any immunization scheme which may in future be carried out.

Sheep. Local sheep have been mated increasingly to the East Freisian rams which have nearly replaced the local ones. The oestrum ovis (sheep nostril fly) infection is still causing trouble in the pure bred Freisian flock kept at the Farm. As this breed was imported from Germany before the war it would seem that we cannot safely delay the importation of fresh blood, to avoid the dangers inherent to in-breeding.

Poultry. Practically all birds kept in back gardens were slaughtered for lack of foodstuffs: most farmers removed all cocks preferring to keep hens only for their laying qualities. To encourage hatching, fertile eggs produced at the Government Farm were exchanged with infertile ones; 38200 hatching eggs were sold from the same source.

Culling continued while a healthy stock was maintained and increased in anticipation of restocking requirements a larger number of rearing, growing, and laying portable pens were constructed to meet the requirements of the new Wied Incita Poultry Farm, where it was planned to concentrate the Poultry Section. All birds were vaccinated against fowl pox and roup.

The flock of birds kept by Government is 95% Black Maltese. This breed which is very hardy and is the result of ten years selection is invariably preferred by farmers to other breeds. Several hundred three weeks old chicks were sold during the period under review only six chicks were allowed to each applicant so that they could be fed exclusively on table scraps and thus lessen the demand on imported fodder. It was found, however, that it was a better policy to sell eggs for hatching and the sale of chicks was discontinued.

Turkeys. The turkey section was transferred to "Ta Rapa" Farm at Buskett — a small farm owned by Government. The free range and ample shade in summer reduced mortality which always occurred with birds confined in pens.

Ducks. Breeding of White Campbell ducks in preference to the Khaki Campbells was taken up with a view of meeting a demand for hatching eggs as no ducks were kept during the war.

Rabbits. Rabbit keeping was a source of meat productions requiring the minimum of imported foodstuffs and which effectively utilized more over, all vegetable scraps. With this end in view fifteen rabbit breeding centres (11 in Malta and 4 in Gozo) were established. Does could be brought to the centres and left there until they were mated — as an inducement owners were allowed to purchase 2½ rtal of deteriorated foodstuffs for every doe so mated. Several hundred matings were done monthly in each centre with the result that rabbit flesh was available during the most critical period of the siege.

Bees. The Malta honey has been renowned for centuries: Cicero the roman orator, extolled its excellent flavour. To revive the honey industry 50 hives were imported from Sicily: these together with others bought locally were transferred to Buskett Gardens where wild thyme was more abundant — bees feeding on this shrub produce the best honey. Three different types of hives were kept at the Farm for demonstration purposes.

Silkworms. An attempt was made to revive what was once a flourishing industry. Hybernated seed was imported from Cyprus in the first week of April and hatched when the mulberry trees were sprouting. The worms were reared on wire trays in a room with a temperature of 20°C. The rearing lasted 45 days, spinning the cocoon started on the 18th May; these were sent to Research Stations, examined by experts, and found of good quality. This industry is handicapped by the lack of mulberry trees and, therefore, cannot thrive.

Export of Livestock. During the period under review four large white gilts and one boar were exported to help re-stocking at Lampedusa; two boars as well as twelve Black Maltese pullets and a cock were sent to the Government Farm at Tripoli; eggs of this breed were also exported to Cyprus.

Imports of Mules. To overcome a local shortage many of the best army mules were imported from Lampedusa and sold by auction to bonafide farmers.

CROPS

With the outbreak of hostilities it was realized that difficult times were ahead. Every effort was made to increase production — thus limiting and reducing the shipping space required to carry supplies for these Islands. Acreage under direct control of the Government Farm was increased; as a first step the Marsa Sports Ground, containing the best alluvial soil, was turned into cultivable land and later 200 tumoli of land at Luqa Aerodrome were also cultivated.

To encourage cultivation of back gardens, the public was supplied with suitable garden seeds at a nominal price and to help the labour problem, a "labour squad" was established to supply labour when needed for the cultivation of these gardens.

Potatoes constituted the most important local crop. Spring potato trials in the Spring of 1944 covering variety, cutting, spacing, eye and rose end work were ruined by flooding following an unexpected late rain in April.

The results of a crop experiment are shown in Appendices "A" and "B". Two local summer varieties "Rose of Melleha" and "Fina" were compared with the usual imported summer favourite "Arran Banner" and "Doon Star" which had done so well in Spring and winter trials. The "Banner" was newly imported Northern Ireland seed, the "Doon Star" was twice grown artificially sprouted seed with a bed of naturally sprouted seed; the "Rose of Melleha" was half naturally and half artificially sprouted while the "Fina" was naturally sprouted. It will be observed that the "Banner" gave the best total yield but that "Doon Star", substantially lower yield, gave a higher percentage ware (69% compared with 58%).

The potato eyes received from the Ministry of Food in United Kingdom arrived in bad condition. Unfortunately most of those which appeared viable were lost in the main experiment. Out of 24 eyes of "Great Scot" planted in an irrigated plot only 6 germinated giving a yield of 4 lbs. A trial plot of locally cut eyes from imported "Banner" seed, gave striking results. Of twenty four eyes planted, twenty three germinated giving twenty two and three fourths pounds of ware, three pounds seed and one fourth chat. Since the eyes weighed ¼ oz. each this meant a return of 69 to 1 from the eyes or 29 to 1 from the whole seed. The trial was an irrigated bed of 7 sq. yards which meant we had a yield of 8 tons to the acre.

A new potato variety "Ulster Commerce" was tried under local conditions. It was received in Malta packed in fibre boxes each containing fifty pounds of seed; the boxes and seed arrived in good condition. However stevedores did not like handling boxes as being comparatively light they grasped them from the thin metal bands surrounding the boxes, which in many instances gave way and injured their hands — stevedores were all for the hundredweight bag. This new variety was tried out at the Government Farm and on thirty three other plots cultivated by private farmers. The result of the trial is shown in Appendix "C".

Overhead irrigation.

To compare results of irrigation by flooding and overhead systems, a small number of water operated oscillators for overhead irrigation were ordered. Approximately half an acre of dry land on the Government Farm was piped for the system. Two sets of 1″ piping sprinkler operated by oscillators were erected 4′ above ground and 18 yards apart. On the 20th May 1944, 2,800 tomato plants were planted and the sprinklers operated for 6 hours, by which time what was very dry ground was thoroughly soaked. Two other irrigations followed before the fruit was picked. The advantage of this system is that there is no after hardening and cracking of soil and what is most important the volume of water required amounted to only two thirds of that required when irrigation is done by flooding; moreover more land may be utilized through the overhead system of irrigation as no ridges are required as in the case of the prepration of beds which are irrigated by flooding. Only one hoeing was given during the experiment and this was done more to kill weeds than through the necessity of cultivation. However, the need for water pressure equivalent to 40 feet head to operate the sprinkler and the initial expenditure involved discouraged the introduction of this irrigation device; the lack of pressure could be overcome by the use of booster pumps but this means additional expenditure.

Thrashing Machines.

The Ransome Thrashing Machines obtained in 1943 have been in full use and have proved exceedingly popular. Bookings far exceeded the working capacity of the machines. In Gozo an "Iruna" model averaged 13 hours daily over ten days including Sundays and festas. The two models in use "Iruna" and "Dragon" were especially designed with toothed back drums to bruise the straw and leave it in the chaffed conditions such as obtained after tread thrashing.

The labour saving efficiency of these machines have been fully appreciated by farmers who were quick to take advantage of this innovation introduced by the Department. The following table gives data of work performed by thrashing machines during 1946 :—

District	Total area in tumoli under cereals	No. of hours machine function	Total estimated area in tumoli under cereals the crop of which was machine thrashed	Total estimated cereals thrashed in salms	Cost of thrashing one salm of cereal	% of area under cereals which was thrashed by machine
					s. d.	
MALTA						
Eastern ...	24,409	281	1,689	1,482	14 10¼	6.99
Central ...		309¼				
Western ...		431¾				
Gozo						
Eastern ...	6,353	436¾	1,187	1,900	10 7¼	18.84
Western ...		410¼				

In both islands a charge of 15/- per hour was made for the use of the thrashing machine: In Gozo however cost per salm of thrashed cereal was 4/3d less than in Malta. This is due to the greater quantity of barley thrashed in Gozo. In this Island 60% of land under cereals was sown meslin i.e. a mixture of 50% wheat and 50% barley and as meslin is more bulky than wheat, the volume of the former is greater, hence the difference in price per salm of cereal thrashed in the two islands.

Gozitans are more inclined to thrash cereals by machine as the conditions required for its working are more in conformity with the practice followed in Gozo. In that Island, thrashing grounds are not scattered as in the case of Malta. In Gozo such grounds are prepared at the outskirts of villages and several farmers use the same ground to thrash their crop awaiting their turn which may be after several weeks. In Gozo, machine thrashing in respect to area under cereals, exceeded that of Malta by 11.85%. The Maltese farmer prepares his thrashing ground indipendently of other farmers and starts work as soon as the crop is reaped. He is not accustomed to wait and hence the reluctance of many farmers to await for their turn to thrash cereals by machines. If a reasonable number of these machines could be made available, it may be estimated that over one half of the total cereal harvest could be machine thrashed: more machines means less waiting on the part of the farmer. For obvious reasons such an enterprise should not be undertaken by Government but by private owners who should be persuaded to run personally their own machine.

A. AZZOPARDI,

Superintendent Government Farm
and Agricultural Organizer.

Appendix "A"

POTATO VARIETY TRIAL

SUMMER CROP

Farm Planted: 23rd March, 1944.
Lifted: 5th July, 1944.

B — 100 ft.

A. 1. Imported (Norir 1943)	B. 1. Naturally Sprouted	C. 1. Naturally Sprouted	D. 1. Naturally Sprouted
B. 2. Naturally Sprouted	C. 2. Naturally Sprouted	D. 2. Artificially Sprouted	A. 2. Imported (Norir)
D. 3. Artificially Sprouted	A. 3. Imported (Norir)	B. 3. Artificially Sprouted	C. 3. Naturally Sprouted
C. 4. Naturally Sprouted	D. 4. Artificially Sprouted	A. 4. Imported (Norir)	B. 4. Artificially Sprouted

A. — Arran Banner
B. — Rose of Melleha
C. — Fina
D. — Doon Star

all 1 oz. sets.

22 sets × 10 sets per bed
1 ft. between sets
1 ft. between rows

Inside measurements of beds
22 ft × 10 ft

ATX

Appendix "B"

POTATO EXPERIMENT

SUMMER CROP

Planted 23rd March, 1944.

Lifted 5th July, 1944.

Varietal Trial

No. of Plot	Variety	Yield	Seed lbs.	%	Ware lbs.	%	Chats lbs.	%
A. 1	"Arran Banner"	104	41	39.3	57½	55.2	5½	5.2
A. 2	do	101	29	28.7	62	61.3	10	9.9
A. 3	(Norir)	95	33	34.7	54	66.8	8	8.4
A. 4		107½	35	32.5	63	58.6	9½	8.8
	Total ...	407½	138	33.8	236½	58.0	33	8.0
B. 1	Naturally	51	22	43.1	21½	42.1	7½	14.7
B. 2	Sprouted "Rose of	56½	21	37.1	30	53.0	5½	9.7
B. 3	Artificially Melleha"	53	21½	40.6	26½	50	5	9.4
B. 4	Sprouted	54	22½	41.6	27½	50.9	4	7.4
	Total ...	2 4½	87	40.5	105½	48.9	22	10.2
C. 1	Naturally "FINA"	43½	16	36.7	25	57.4	2½	5.7
C. 2	Sprouted	59½	16½	27.7	39	63.5	4	6.7
C. 3		52½	14	26.6	34	64.7	4½	8.5
C. 4		80½	14½	18.0	62	77.0	4	4.9
	Total ...	236	61	25.8	160	67.7	15	6.3
D. 1	Naturally "OON	67	18	36.8	34½	66.4	4½	6.7
D. 1	Sprouted "STAR"							
D. 2		75	24	32	45½	60.6	5½	7.3
D. 3	Artificially	101½	22	21.6	73½	72.4	6	5.9
D. 4	Sprouted	103½	19½	18.8	78½	75.8	5½	5.3
	Total ...	347	83½	24.0	242	68.7	21½	6.0

Plot No.	District	Soil		Production in Rtal				Total Production in Rtal	Production in Rtal per Tumolo	Production in Tons per Acre	Remarks
		Colour	Depth	Large	Medium (Ware)	Small (Seeds)	Discarded				
1.	Żabbar	light red	2 ft.	350½	208	52	4½	615	4,305	12.108	Irrigated 5 times.
2.	do.	red loose	1½ ft.	7½	52½	40	5	105	735	2.067	Non-irrigated.
3.	do.	red	3 ft.	87	140	35	5	267	1,869	5.257	Irrigated 5 times.
4.	Żejtun	red loose	2 ft.	485	90	46	20	641	4,487	12.619	do. 6 times.
5.	do.	do.	1½ ft.	34½	45	28	3½	111	777	2.185	Non-irrigated.
6.	do.	do.	2 ft.	69½	83½	21	2	176	1,232	3.465	Semi-irrigated (Twice).
7.	Għaxaq	do.	1½ ft.	84	121	56	11	272	1.904	5.355	do.
8.	Rabat	clayey	2½ ft.	242½	195½	123	10	571	3,997	11.242	Irrigated 10 times
9.	do.	do.	very deep	107	157	48	12	324	2.268	6.379	do. 5 times.
10.	do.	white	1½ ft.	244½	186½	117	8	556	3,892	10.946	do. 10 times.
11.	Dingli	red loose	1 ft.	122	169	54	8	351	2,457	6. 91	Semi-irrigated (once)
12.	Żurrieq	grey	1½ ft.	65	132	41	16	254	1.778	5. 00	Non-irrigated.
13.	Luqa	light red	2 ft.	98	126	50	3	277	1,939	5.453	do.
14.	Kirkop	grey	4 ft.	20	46	70	9	145	1,015	2,855	do.
15.	Żurrieq	red heavy	1½ ft.	42½	68	77	2½	190	1.330	3 74	do
16.	Gudja	greyish white	2 ft.	28	44	62	5	139	973	2.737	do.
17.	Birżebbuġa	grey	2 ft.	8½	16	42	1½	68	476	1.339	do.
18.	Attard	greyish white	2½ ft.	66	71	40	8	185	1,295	3.642	Semi-irrigated (Twice).
19.	Għargħur	do.	3 ft.	41	70½	63	6½	171	1,197	3.367	Non-irrigated.
20.	Naxxar	red heavy	3 ft.	13	70	79	8	170	1,190	3.347	do.
21.	Birkirkara	grey	1½ ft.	38	109	58	7	212	1.484	4 174	do.
22.	St Paul's Bay	red loose	2 ft.	133	106	74	5	324	2.268	6 379	Irrigated 10 times.
23.	Sta Vennera	red heavy	4 ft.	25	28	35	2	90	630	1.772	do. 6 times.
24.	St Paul's Bay	do.	1½ ft.	405½	189	52½	6	653	4.571	12.856	do 8 times.
25.	Melleħa	red loose	2 ft.	82	52	34	6	174	1.218	3.426	do. 6 times.
26.	Birkirkara	red heavy	4 ft.	86	161	30	2	279	1.953	5.493	do. 4 times.
27.	Melleħa	red loose	2 ft.	119	250	50	5	424	2,968	8.347	do. do.
28.	Rabat (Gozo)	clayey	very deep	105	194	53	7	359	2,513	7.068	Semi-irrigated (Twice).
29.	Żebbuġ	greyish white	2 ft.	45	102	44	5	196	1,372	3 859	Non-irrigated.
30.	Siġġiewi	do.	2 ft.	10	90	50	3	153	1,071	3.012	do.
31.	Mġarr	red loose	3 ft.	4	24	70	11	109	763	2.146	do
32.	Kemmuna	do.	4 ft.	133	150	30	7	320	4,480	12.6	Irrigated 8 times (Supplied 25lbs of
33.	do.	do.	4 ft.	76	100	80	20	276	3,864	10.867	do. 9 times seeds).
34.	Marsa	do.	3 ft.	284	159	73	10	526	3.682	10.356	do. 5 times.
35.	do.	greyish white	2 ft.	6	70	66	8	150	1,050	2.953	Non-irrigated.

Seed used—Each plot one box of 50 lbs.

APPENDIX 2.

Report by the Superintendent of the Government Farm and Agricultural Organizer for the period 1946/47.

LIVESTOCK

Cattle. The severe losses of cows due to enemy action have not been replaced yet; it is proposed to substitute the few cross cows with pure bred ones. Breeds to meet local requirements of dairies for the supply of raw milk, dual purpose breeds to have quick fattening bullocks for farmers keeping one or more cows and a breed yielding milk rick in butter fat, needed by Gozitan farmers for the production of basket soft cheese "gbejniet", may advantageously be imported. However the presence of various breeds, may increase the tendency to cross breeding as farmers are not very particular to keep livestock true to type.

Pigs. The number of breeding stock at the Farm was reduced to pre-war level; the main object of the section being that of rearing from pedigree sows, selected stud boars, to be sold to licensed stud boar keepers with the object of improving the local breed which has a very high percentage of blood of the Large White breed.

Goats. Goat men express different views on the offspring obtained from the mating of the Maltese goat with the Saanen billies, the reason being that the suspicious goatmen mated goats with poor yield and other goatmen mated their best goats. In many instances only one kid was born, while the local goat kids twins. Moreover, it was observed that several kids died especially when twins and triplet were born. In spite of this there appears to be an inclination for the adoption of this breed.

Sheep. Rams of the East Fresian breed are still being successfully used for crossing with local sheep. Here again Gozitan shepherds were keener to mate their sheep with the ram of the imported breed, than the Maltese who seldom cross their sheep. Although such matings are limited the number of cross sheep is increasing in Malta, due to transfer of gimmers from Gozo, with a high percentage of blood of the foreign breed. The sheep nostril fly was somewhat checked by tarring the nostrils during its breeding season.

Poultry. The restocking of poultry, Black Maltese breed in particular, is proceeding satisfactorily: the pre-war number of poultry kept on farms was restored and amateurs, availing themselves of the rapid means of transport imported hatching eggs of several breeds. The supply of poultry and eggs would have been satisfactory had not a "Newcastle Disease" epidemic caused the destruction of 50% of the existing stock. Women farmers however are never discouraged and with perseverance they resumed chick rearing to replace the lost hens.

Turkeys. The Mammoth Bronze Turkeys were brought back to the Farm from Buskett Gardens as they were causing damage to vines in summer. This breed is very popular and there is a constant demand of hatching eggs during the breeding season.

Ducks. There was a continuous demand of hatching eggs of the White Campbell breed; supply of such eggs was always available, as steps had been taken the previous year to increse the number of ducks at Wied Incita Farm.

Rabbits. The Flemish Giant breed is being reared for the production of bucks to supply the Malta and Gozo rabbit centres for crossing of the local breed, which has increased appreciably in size. A limited number of does and bucks were also sold.

Bees. Bees are kept in seventy five modern beehives. Owing to climatic conditions the honey produced was below normal as regard quality and quantity while wasps made havoc of swarms, destroying most of them. Moreover, owing to persistent drought many wild plants failed to flower and consequently bees died of starvation. Several qantars of discarded sugar were sold to bee keepers at a nominal charge, to be fed to bees. Farmers are keen on bee-keeping; they are encouraged to follow mourn methods and make use of the box type of hives when possible. A small subsidy for each hive kept is paid, those using the box model receiving a higher subsidy.

Silkworms. Several hundred silkworms were reared, the scope being exclusively educational as no attempt may be made to revive the once flourishing local industry owing to the destruction and failure to replace the mulberry trees which in the past could be seen in most valleys.

Stud Breeding Centre. To avoid danger of infection to Farm livestock, when privately owned breeding stock is brought for mating, a Breeding Centre at Mgiret farm house was established, where cows, sheep, goats and sows are mated at a nominal fee. Does are also mated but no charge is made in this case. Matings of rabbits exceeded one thousand three hundred. This Breeding Centre was mainly established to replace temporarily subsidised stud animals on loan, which scheme was discontinued in Malta during the war. A limited number of stud bulls is still kept in Gozo. With the importation of pure breeds, the stud bull service in various districts will again be resumed in Malta.

Importation of Pigs. The local breed of pigs has been constantly improved in the past years by crossing with the Large White breed. The Government Farm supplied practically all stud boars but due to the difficulties of introducing new blood during the war, inbreeding caused deterioration of this breed. To counteract such inbreeding, at the beginning of the year, five in-pig gilts and two boars all unrelated were imported from the United Kingdom. The beneficial effects have already been noticed as there is a decided improvement in the weight of pigs at weaning and killing ages. The Pig Breeding Ordinance which during the war remained inoperative is again being enforced and stud-boar keepers are being supplied with selected boars reared at the Government Farm.

Crops. The selection of vegetable marrow seed with the object of ensuring standardization of produce and well developed seed has been practised. Local produce lacks uniformity and selection as stated above will continue for the aforesaid crop and other market garden produce.

Two years old undercorticated clover seed was sown about mid August; this system has the following drawbacks :— a) weeds which on account of high cost of labour are not always removed, obstruct the full development of clover, with a consequent poor crop, b) early rains may induce germination of clover seed and the seedlings after a long spell of fine weather may die for lack of moisture. These disadvantages may be overcome if decorticated clover seed is sown late in November or early December. Decorticatd seed was sown early in December when the rainfall was 6 inches; germination was good, clover of better quality but yield reduced as good results, may only be obtained with late rains.

The area under lucerne crop was extended with the object of decreasing the purchase of concentrated foodstuffs for feeding to livestock. Lucerne is fed to all animals and and this year was fed also to equines. Scarcity of water, however, limited the weekly irrigation and therefore the yield ; seed was sold to those having a back garden and water to spare. This valuable fodder crop is not cultivated in irrigated ares because of the high prices of market garden crops which are more remunerative.

With the object of testing the fertilizing value of compost manuring an experiment was carried out as follows : Two stone manure platforms were constructed each measuring 20ft. long 6 ft. wide 3 ft. high into which materials which are ordinarily available on an average farm were duly collected. Such waste material consisted of manure from one bull, one ram, one billy-goat, one boar and twenty rabbits, weed of semi-dry potato haulms and green sorrell in equal parts, house refuse and human excreta of a family of six. After sixty-six days the platform was filled but a space of two feet was left for turning. The manure was twice turned at one month interval, each time taking advantage of showers of rain. When seasoned the weight of manure from on platform was 337 rtal. This was spread on 800 sq. ft. land on which vegetable marrow was sown; also 1600 sq. ft. were similarly treated and sown with tomatoes. Two other plots, one with ordinary farm manure and another with manure obtained from Zynothermic cells were also planted with the same crops. The resultant yield is tabulated hereunder :—

Crop	Compost manure	Zymothermic cells manure	Farmyard manure
Vegetable marrow	106½ lbs	80 lbs	84¼ lbs
Tomatoes	212¾ lbs	241¼ lbs	163½ lbs

Compost would have given still better results had it rained more during the period the heap was being composted. This method has also the advantage of utilizing all weeds and residue of crops after lifting, such as potato and tomato haulms which are not always utilized at present.

Fertil-Cel is a radio active fertilizer compound. 2 grams of the active substance is sufficient to activate 10 sq. ft; it was claimed that its presence in the soil increased yield from 50 to 100%. Two plots A and B each measuring 10 sq. ft. were planted respectively with nine tomato plants. Both plots were in the previous summer manured with farmyard manure, and left fallow since then. Before planting plot A was treated with Fertil-Cel, the active substance was mixed with sand which was previously washed and left to dry. The mixture was then lightly hoed to a depth of 3 inches. Plot B acted as control. The yield in the treated plot was 26½ lbs, while in the control 21 lbs, a 21.17% higher yield in the treated plot.

On many farms liquid manure is not collected in a cesspit. A trial with vegetable marrows was done with the object of showing the beneficial effects of liquid excreta. The control plot was irrigated with water only, while the other one was irrigated with very diluted liquid excreta derived from livestock which is usually kept on a farm. The production per tumolo of the control plot amounted to 19 qantars 74 rtal while in that irrigated with dilute liquid excreta production reached 24 qantars 95 rtal. Obviously liquid manure may be utilized in irrigation areas only and for crops which are not eaten raw.

In view of the high cost of labour and as wages are likely to remain high for several years, the use of machinery should be extended. To show that cost of production may be reduced a free demonstration was carried out on different fields, located in several districts with a reaper for the mowing of wheat. Many farmers attended such demonstration; they agreed that such an implement saved labour and asked for details.

Thrashing machines. Since thrashing machines were imported in 1943 a great change occurred in the way of thrashing cereals. Following intensive propaganda work carried out by the Department, the old system of theshing floors is being superceded. During the period under review Government thrashing machines, with the exception of one kept for Farm use and for instructional purposes, were sold out by tender, while enterprising farmers imported four machines. All of them worked at full capacity and it is likely that in the near future more machines will be imported and the time saving method will oust the old one on most farms.

Irrigation areas. These were established during the war to increase production: it was planned to have 40 areas but only 5 were actually developed, each area measuring about 100 tumoli of land. Water in these areas with one exception, is more or less brackish; the effects of its use were soon visible, production decreased from year to year and with ever decreasing rainfall the salts deposited have been only partially leached, thus the salts in the soil are increasing. In summer only those plots previously left fallow or were dry farmed could be irrigated as if irrigations in two successive summers are done, in the second year the crop obtained is negligible.

A. Azzopardi,

Superintendent of Government Farm
and Agricultural Organiser.

APPENDIX 3.

Report of the Superintendent of Public Gardens for the years 1938 to 1946 which comprises a General Survey of this Branch.

REPORT FOR 1938-39.

1. All Public Gardens were fully patronised by the public, particularly on Sundays and Festas, until the outbreak of war when incessant bombing damaged certain gardens and placed others out of bounds.

PUBLIC GARDENS.

2. A great number of different varieties of annuals were planted, which gave a fine display of colour during their flowering period.

3. The Superintendent supplied information personally and by correspondence to those seeking advice in horticulture and arboriculture. 48 lectures were delivered by the Inspector of Public Gardens to Assistant Gardeners and Apprentice Gardeners during the year on the following subjects :—

i) The construction and the planting of cactus garden;
ii) Hybridisation and cross breeding;
iii) Trenching, manuring and planting of fruit trees;
iv) Armellaria and its control;
v) The benefit of green manuring;
vi) The cultivation of different varieties of Iris;
vii) The difference in root and stem in anatomical structure;
viii) The importance of water in plant life;
ix) Growing parts and cell division;
x) Structure and physiology of plant cell;
xi) The use of the different species of moss and their propagation.

4. Cut flowers were supplied three times per week to Hospitals, free of charge, throughout the year.

5. The following trees and shrubs were planted in the undermentioned gardens during the year :—

Locality	Trees	Shrubs
Palace Yard, Valletta	4 Oleanders 1 Thuya	1 Lantana
Upper Barracca Garden	1 Evergreen Oak 2 Palms 2 Oleanders	7 Duranta
Kalkara Garden, Floriana	24 Ficus 4 Oleanders	6 Diosma 4 Leonotis 4 Lantana 1 Hibiscus
Rundle Garden, Floriana	1 Ficus 28 Oleanders	6 Leonotis 2 Pittosporum 10 Hibiscus 12 Myoporum
Maglio Garden, Floriana	1 Poplar	140 Evergreen Box
Miratore Garden, Floriana	3 Eucalyptus 1 Eleagnus 2 False Pepper 1 Ficus	16 Myoporum
Senglea Point Garden	1 Date Palm	
Blata l-Bajda Garden		140 Myoporum
Joseph Howard Garden, Rabat	2 Poinsettia	150 Myoporum 30 Cyrtanthera 42 Lantana
Gżira Garden, Sliema		12 Cyrtanthera

PUBLIC PLANTATIONS, MALTA.

6. The work in connection with trees growing along roads and open spaces consisted of pruning, trimming, tying, changing worn-out props and replacing trees damaged by strong winds and by children. It is estimated that the maintenance of each tree in the Public Plantations was 1/3 a year.

Trees planted.

7. The number of trees planted during the year was 781; of this number 523 were replacements of trees destroyed. The greater part of destruction was caused by motor traffic.

New Plantations Added.

8. The following is a detailed list of new plantations during the period 1st April, 1938, to 31st March, 1939:—

New Square, Paola	32 Ficus trees
Silver Jubilee Road, Cospicua	36 Oleander trees
Silver Jubilee Road, Cospicua	36 Pine trees
Floriana Ravelin	25 Oleander trees
Wied il-Għasel 1/o Mosta	24 Ash trees
Spencer Monument Glacis (Blata l-Bajda)	105 Carob trees
Total ...	258

Public Nurseries.

9. Propagations of trees, shrubs, etc., by seeds, cuttings, layers and suckers was carried out at Victoria Gate Nursery, etc. Sufficient plants were raised in order to meet the requirements of the Department and for sale to the Public.

10. The following table shows the number of trees and shrubs supplied during the year from the Public Nurseries:—

To whom supplied	Ornamental trees	Ornamental Shrubs	Flowering and foliage Plants	Orange & other Citrus trees	Other Fruit trees
Public Plantations	781	—	—	—	—
Sant Anton Public Gardens	6	40	24	24	—
Other Public Gardens	114	353	237	—	—
Sant Anton & Verdala Private Gardens	9	2	61	20	—
Government Institutions, Gozo ...	—	—	6	—	—
Government Institutions, Malta	—	—	25	—	—
Villa Rundle and Public Plantations, Gozo	136	—	8	—	—
Private Growers	111	418	268	119	75
Total	1,157	813	629	163	75

GOZO.

VILLA RUNDLE.

11. This garden received constant attention and all routine work was punctually carried out. Roses and annuals cultivated here made a fine display of flowers.

PUBLIC PLANTATIONS.

12. Trees growing along roads and open spaces were attended to. Missing trees were replaced in due time. 159 trees were planted in order to replace those destroyed by stormy weather, vandalism and goats. 185 trees were newly planted during the year.

NURSERIES.

13. These were kept well stocked with trees and shrubs. The following table shows the number of trees and shrubs supplied during the year:—

To whom supplied	Ornamental Trees	Ornamental Trees	Flowering Shrubs	Fruit Trees
Public Plantations, Gozo	278	6	60	—
Villa Rundle, Gozo	3	—	41	—
Private Growers, Gozo	1	27	49	4
Public Nurseries, Malta	36	—	—	—
Total ...	318	33	150	4

REPORT FOR 1939-40.

14. The gardens, nurseries and open spaces in Malta and Gozo were dedicated to the growing of vegetables and fodder. The former was sent to the market and the latter was sold by tender.

15. Besides cultivating vegetables and fodder, trees, shrubs, etc., in the Public Gardens, Plantations and Nurseries were well attended to.

REPORT FOR 1940-41.

16. The growing vegetables and fodder were badly damaged by enemy action. Bombs were dropped in practically all gardens, damaging and destroying crops, trees, etc. Bomb craters were promptly filled by the Public Gardens staff.

17. Owing to the conscription of the younger gardeners, work in Public Gardens had to be restricted.

18. A stick af bombs was dropped at Victoria Gate Nursery destroying about 10,000 plants in pots, damaging water conducts and water service pipes. The iron railings and gate which formed part of the boundary were totally destroyed; thus this nursery, one of the most important, was almost totally destroyed.

19. So many bombs were dropped in some of the gardens, viz: Sa Maison, Miratore and Rundle Gardens, that the growing of vegetables or fodder became impossible.

20. In other gardens, such as Maglio, Upper and Lower Barracca, Kalkara, St. Philip Nursery and Tal Kmand Nursery, vegetables (Cabbages, Cauliflowers, Seakale, Onionos, Spinach and Beetroot) were grown for seed production so that the Department could supply both amateur gardeners and farmers.

21. Vegetables seedlings were grown for sale in the public nurseries. These were grown on a large scale and both amateurs and farmers were supplied.

22. The Superintendent supplied information personally to those persons seeking advice as to what kind of vegtbles could be successfully grown in their particular garden.

PUBLIC PLANTATION

23. Work consisted mainly in removing stumps of trees damaged by enemy action.

VITICULTURE

24. The stock vines could not be well looked after owing to shortge of labour.

GOZO

25. In the Gozo gardens and nurseries, every inch of ground was availed of for the growing of vegetables and fodder. Also, some care was given to trees, shrubs, etc., in the gardens, nurseries and plantations.

REPORT FOR 1941-42.

26. The work of growing vegetables for seed production in the public gardens and nurseries was carried out in those places where the boundary walls were not totally destroyed by enemy action and therefore open to pilfering.

27. Instructions were received that all trees in the nurseries including the American vine nurseries, were to be uprooted. This was done in order to supply the Victory Kitchens with firewood and to sow wheat instead in those areas. By so doing, about 45 Tomnas of land were put under wheat.

28. The following table shows number and variety of trees destroyed:—

Kind of Trees	Nursery		Total
	Tax-Xewk	St Paul's	
Cypresses	1,000	1,000	2,000
Pines	1,000	1,500	2,500
Cercis	100	100	200
Celtis	70	80	150
Oleanders	1,000	500	1,500
Laurus	250	250	500
Myoporum	500	500	1,000
Ailanthus	400	400	800
Ficus	430	400	830
Olives	70	80	150
Melia	250	200	450
Other Trees	250	250	500
Grand Total ...	5,320	5,260	10,580

29. Most gardeners were employed in pruning trees both in the public gardens and in the public plantations. The prunings were supplied, on payment, to the Victory Kitchens.

30. At Notre Dame Gate Nursery, Floriana, we had about 500 Cauliflowers growing for seed production; these were totally destroyed and the gardener in charge killed when a stick of some half a dozen bombs was dropped there.

31. A number of men from the Public Gardens staff were required to work in other branches of the Department in connection with wheat, potato and vegetable schemes, also to help in the Plant Pathology Branch. Consequently, the remaining gardeners had to work very hard for a considerable period, to cope with the work in hand.

GOZO.

32. Trees in gardens, nurseries and plantations were rather neglected as the gardeners were required to perform other essential work mainly in connection with "War Emergency Schemes".

REPORT FOR 1942-43.

33. As most of the Public Gardens and Nurseries had the boundary walls or iron railings totally destroyed by enemy action, it was impossible to grow vegetables as, pilfering would have inevitably ensued. Consequently, broad beans, peas, cauliflowers, onions and sea-kale for seed production were sown in rows between fruit trees and vines at Buskett.

34. Bombs were also dropped in Sant Anton Gardens and great damage was caused to the greenhouse and 80 citrus and 30 decorative trees destroyed.

35. All gardens and nurseries were, some slightly, and some seriously, damaged by enemy action.

36. Owing to the shortage of labour many plants were lost and it is only through import that it will be possible to replace them.

37. Three Head Gardeners with a gang of men each, helped in the filling of bomb craters n fields at the request of farmers who required immediate help in the raising of additional foodstuffs.

38. The Motor Sprinkler with crew, had to supply water to the Abattoir and other areas where it was unobtainable owing to damage caused by the enemy to water service pipes.

REPORT FOR 1943-44.

PUBLIC GARDENS.

39. As bombing had by now ceased gardeners were employed mainly in clearing debris and placing it out of the way in a side of the garden. The soil was dug and manured and planted either with flowering plants for seed production or with vegetables for the market.

40. Those gardens the iron railings of which were blasted by enemy action and consequently open to all and sundry were cleared of debris and the soil dug and levelled. It was not advisable to have such gardens planted before new railings were set up, for obvious reasons.

41. His Excellency Lord Gort requested us to plant trees along roads and open spaces in lieu of those destroyed by enemy action, consequently as we were short of men we asked for and obtained the return of some of the conscripted gardeners to cope with the work in accordance with His Excellency's wishes.

42. Propagation of trees, shrubs, etc., by cuttings, suckers, layers and seed was carried out. After reserving sufficient area for this purpose, the remaining land was sown with barley and broad beans.

PUBLIC PLANTATIONS.

43. The work in connection with trees growing along roads and open spaces consisted in :—

i) Uprooting stumps of trees damaged by enemy action.

ii) Pruning — The trees had not been pruned for about 2 years, owing to lack of labour, consequently, pruning had to be rather hard.

iii) Watering — Those young trees which had not been irrigated for the last 3 years, received a watering which they needed badly. Hoeing and levelling after each watering was performed.

VITICULTURE.

44. Work in this line had just started. The small plot of mother plants that was left over was dug and given good cultivation. Land was prepared to receive 1,400 rooted cuttings to become mother plants and about 20,000 rooted cuttings were sold to farmers the following year.

GOZO.

45. The mother vines in Gozo were not uprooted, but wheat was sown among the vines and as a result the plants received a setback.

46. As decorative plants in the nurseries here were not destroyed, all these trees, shrubs, etc., in the garden, which died in previous years, were immediately replaced.

REPORT FOR 1944-45.

PUBLIC GARDENS.

47. Flowering plants were planted in all public gardens with the exception of Blata l-Bajda, Sa Maison and Miratore Gardens. In the first named garden huts for refugees were built all over the place, while in the other two gardens the water service was damaged by the enemy and had not yet been repaired.

48. Owing to the shortage of water, only sufficient summer flowering plants were grown in order to keep the stock ; trees, bushes, climbers and hedges were pruned and trimmed and kept in good order.

BUSKETT.

49. In Buskett an attack of Capnodis on the collection of peaches, plums and on young stone fruit trees in the nurseries, caused a grevious setback.

50. Over 7,000 graftings were performed of the following varieties: Pears, Peaches, Plums, Kaki, Greengage, Cherries and Prunes. Some of the young trees were sold the following December.

NURSERIES.

51. Propagation of trees, shrubs, etc., gradually progressed.

52. Rooted cuttings were transplanted in tubs and in the open ground, such work was performed as much as possible at the right time in order that the seedlings, etc., might not be handicapped. Plants in pots had to be watered daily and on very hot days even twice a day.

53. As Victoria Gate Nursery had been badly blitzed and no repairs carried out, we lost the great advantage that this site enjoys, owing to its sheltered position. As a result certain plants — as Ficus, Olea, Palms, Casuarina, etc. — took a much longer time to develop when reared in other places which have not the ecological characteristics of Victoria Gate Nursery.

PUBLIC PLANTATIONS.

54. Work in this branch consisted mainly in watering, pruning, adding supporting stakes to trees, and changing the wires supporting stems to stakes.

55. 45 Pinus Halepensis, 15 Ficus Lucida, 15 Quercus Ilex and 6 Eucalyptus Gomphocephala were planted along roads and open spaces in lieu of those lost by enemy action.

56. The following is a list showing the locality and number of trees destroyed by enemy aircraft :—

Żabbar		
Prince of Wales Square	Ficus	3
Cottonera.		
Silver Jubilee Road	Pinus	20
	Oleander	22
St Margaret Square	Melia	240
	Ailanthus	42
Msida.		
Msida Wharf	Pinus	16
	Tamarix	15
	Schinus	16
Msida Valley	Cercis	5
	Schinus	5
Birkirkara.		
Valley Road	Oleander	15
Balzan.		
Balzan Valley	Schinus	26
Mosta-Naxxar Road	Ficus	17
	Populus	13
	Schinus	3
	Oleander	1
	Other trees	16
High Street	Ficus	4
Naxxar.		
Naxxar Road	Pinus	2
Żebbuġ.		
Bishop Caruana Street	Pinus	8
Qormi Road	Pinus	20
Luqa Hill	Pinus	5

Marsa.		
Addolorata Cemetery Road	Pinus	36
Poor House Road	Lilac	8
Rabat.		
Nicolò Sawra Street	Schinus	8
Saqqajja Square	Ficus	3
Saqqajja Hill	Ficus	4
Rabat-Valletta Road	Pinus	134
Rabat Qormi Road	Pinus	35
	Ailanthus	5
Rabat-Żebbuġ Road	Cypresses	8
	Pinus	16
Rabat-Siġġiewi Road	Pinus	6
Rabat-St. Paul's Bay Road	Pinus	5
	Cypresses	6
Mtarfa Road	Pinus	14
Mosta Road	Cypresses	30
Fiddien Road	Morus	70
	Populus	5
Buskett Road	Pinus	12
	Ailanthus	8
Lawrenti Road	Pinus	11
	Morus	10
	Cypresses	30
	Ulmus	12
Notabile.		
Mesquita Square	Morus	5
The Bastions	Ficus	4
Magazzini Street	Schinus	1
Birżebbuġa.		
Bir-id-Deheb	Tamarix	22
	Ficus	4
Gudia.	Oleander	14
Xiaq.	Ficus	6
	Oleander	5
Żurrieq.		
Valletta Road	Pinus	8
Safi.	Ficus	4
	Oleander	4
Qrendi.	Oleander	3
Mqabba.	Oleander	11
	Ailanthus	26
Żejtun.		
Cospicua Road	Morus	72
Pozzi Square	Oleander	6
St Gregory Street	Pinus	1
Piazza Maggiore	Ficus	7
Hamrun.		
High Street	Schinus	16
Valletta.		
East Street	Olives	3
St. Barbara Street	Olives	4
Marsamxett Road	Ailanthus	38
	Melia	7
	Pinus	8
Peacock Garden	Celtis	15
	Cercis	8
Main Ditch	Other trees	50

Floriana.		
King George Avenue	Schinus	17
Sarria Street	Oleander	48
	Oaks	14
Nelson Road	Oak	3
Near the Pavilion	Ficus	23
Duke of York Avenue	Ficus	9
Miratore Square	Oleander	18
	Melia	33
	Lilac	6
Philip Sciberras Square	Oaks	3
	Ficus	2
	Palms	3
Kalkara Steps	Ficus	12
Britannia Street	Schinus	10
The Mall	Ailanthus	24
Capuchin Street	Olives	15
St. Francis Ravelin	Oleander	22
	Palms	3
Marsa.		
Blata l-Bajda Road	Oaks	48
	Carobs	26
Gas Street	Oleander	26
Marsa Road	Ficus	20
Pietà.		
Princess Melita Road	Ficus	18
Princess Melita Glacis	Pinus	30
	Cypresses	35
Ta Braxia	Pinus	4
	Cypresses	17
Sliema.		
Tower Road	Tamarix	184
Balluta	Melia	2
Imsierah	Ailanthus	33
Ta Buqa	Pinus	3
Ta Xbiex	Pinus	10
	Tamarix	10
Pawla.		
Pawla Square	Pinus	8
	Oleander	9
Pawla Hill	Oleander	27
School Square	Ficus	25
Buon Consiglio Square	Ficus	3
Attard.		
Valletta-Rabat Road	Oleander	45
	Pinus	31
Notary Zarb Street	Pinus	6
	Oleander	5
	Total	2,231

VITICULTURE.

57. The stock of American Vine Rootlings propagated in the nurseries in Malta and Gozo was rapidly increasing.

58. As the rainfall since planting was very low, these cuttings had to be watered very often to make up for the lack of rain during February and March. Hoeing after each watering was performed. For the reason that the demand by farmers for these rootlings exceeded the supply, applicants received an equal percentage of their total requirements.

GOZO.

VILLA RUNDLE.

59. Routine work was punctually carried out. The annuals gave a fine display of flowers which the public greatly enjoyed.

NURSERIES.

60. Propagation of tree, bushes, etc., not available in Gozo were supplied from Malta. However trees of planting size were sent to Malta to be planted along roads and open spaces.

PUBLIC PLANTATIONS.

61. Owing to lack of labour and also as scantlings are too expensive and not easy to buy only a few trees were planted to substitute those which had been lost during the war years. The following is a list of trees which died during the war years :—

Għarb.		
From Victoria to Għarb Road	Morus	10
	Pinus	2
	Oleander	3
	Laurus	9
	Myoporum	1
	Schinus	1
From Small Gardens Road to "Ta' Pinu"	Cycas	1
	Coprosma	4
	Bougainvillea	3
	Tamarix	6
Xagħra.		
Calypso Square	Oleander	1
Triq tal-Imgħajjem	Populus	10
	Cypresses	6
Victoria.		
Valley Tal-Hamimiet	Oleander	3
	Populus	3
Victoria to Żebbuġ Road	Morus	10
	Celtis	5
	Tamarix	2
Capo Mastro Street	Tamarix	3
	Oleander	1
	Ficus	1
Behind St. Augustine Church	Oleander	10
	Morus	2
St. Theresa Hospital Street	Pinus	20
Annunciation Street	Pistaccia	9
	Carobs	5
St. Domenic Street	Oleander	2
	Morus	3
Xlendi Road	Lilac	4
Valley ta' Bożombraw	Eucalyptus	1
	Morus	9
Xagħra Road	Morus	10
St. Leonard Street	Morus	6
Valley Taċ-Ċanti	Morus	15
	Carobs	7
	Tamarix	3
Sannat.		
Sannat Square	Oleander	4
Ġnien Is-Sultan Street	Tamarix	10
	Lilac	11
	Morus	1

Għajnsielem.		
Chambray Road	Tamarix	4
	Araucaria	2
	Cypresses	3
Mġarr Road	Cercis	4
	Ficus	2
	Phytolacca	3
	Pinus	7
	Populus	30
	Lilac	4
	Tamarix	4
	Morus	2
Qala.		
Mġarr Road	Morus	3
Wardija Road	Oleander	18
Nadur.		
Qala Road	Morus	3
Nadur Square	Oleander	5
Xandriku Street	Cypresses	10
	Morus	5
	Populus	9
Hamet Road	Morus	2
	Pinus	8
Marsalforn.		
Marsalforn Road	Oleander	3
	Lilac	6
	Morus	10
	Tamarix	7
	Pinus	14
	Myoporum	8
Qbajjar Bay	Tamarix	9
Tower Road	Tamarix	20
Marsalforn Bay	Tamarix	7
Mentqa	Tamarix	8
	Oleander	3
Marsalforn Valley	Morus	113
	Tamarix	27
	Carobs	43
	Olea	3
	Eucalyptus	3
	Lilac	3
Qtajjar.		
St. Mary Street	Tamarix	86
Kerċem.		
Xlendi Bay	Tamarix	10
St. Lucy Street	Morus	8
	Tamarix	32
Xlendi.		
St. Simon Street	Tamarix	14
Żebbuġ.		
Żebbuġ Square	Oleander	7

62. The following is a list of trees which have been wilfully destroyed :—

Għarb.		
Ta' Pinu Square	Quercus	1
Victoria.		
Għarb Road	Pinus	1
	Morus	2
	Schinus	1

Hamet Road	Ailanthus	1
	Oleander	1
	Schinus	1
Gidrin Street	Ficus	1
Annunciation Street	Morus	2
St. Francis Square	Ficus	1
St. Domenic Street	Morus	1
Sannat Road	Oleander	1
	Schinus	1
	Pinus	7
St. Leonard Street	Morus	3
	Pinus	5
Ta' Hamet Road	Morus	3
	Pinus	1
Kerċem.		
St. Lucy Street	Morus	1
St. George's Valley	Morus	8
Sannat.		
Ġnien Is-Sultan Road	Lilac	6
	Morus	1
Għajnsielem.		
Mġarr Road	Cercis	5
	Lilac	5
	Oleander	1
	Morus	1
	Ficus	1
	Ailanthus	4
	Phytolacca	3
Nadur.		
Nadur Road	Morus	5
	Pinus	5

REPORT FOR 1945-46.

63. Most of the Public Gardens have been cleared of debris; water service pipes are being repaired; soil raked, dug, manured, and planted with annuals. Debris is being cleared and those gardens which have had their boundaries blasted by enemy action are having a temporary barbed wire fence erected by the gardeners staff. We expect that the Public Works Department will replace this fencing by works of a permanent nature, and this at an early date.

64. In all public gardens where flowering plants could be grown and in the plot near the War Memorial and Traffic Island at Msida we have had a wonderful display of flowers, so much so that floral and pattern designs were photographed and reproduced as post-cards and in the press both local and in England.

65. Owing to shortage of water, we grew only sufficient summer flowering plants to maintain stock.

GREEN HOUSES AT SANT'ANTON.

66. These were badly damaged by enemy action and as a result most of the plants have died of exposure.

67. Trees, shrubs, etc., have been planted in the Public Gardens to replace war casualties as follows:—

Sant' Anton Public Gardens.

Citrus Trees	63
Loquats	8
Roses	36
Palms	6
Pampas Grass	14
Bougainvillea (Standard)	16
Shrubs and Bushes	74

Valletta and Floriana Public Gardens.

Olea Speciosa	30
Quercus Ilex	5
Nerium Oleander (Standard)	4
Casuarina	2
Jacaranda	1
Eucalyptus	1
Cycas	9
Ligustrum	2
Hybiscus	3
Acalypha	3
Nerium Oleander (Bushes)	93

NURSERIES.

68. All nurseries are again in their infancy, and it will naturally, be some time before trees growing there reach planting size or age.

69. Propagation of trees, shrubs, climbers and palms by seeds, cutting layerings and suckers has been carried out.

70. All work of planting and transplanting has been performed as much as possible at the right time in order that seedlings might have every benefit and advantage.

71. The Victoria Gate Nursery is not yet functioning; it is the best nursery we possess, as it is sheltered from all winds and very suitable for quick raising of certain plants, particularly, Ficus, Genista, Palms, Olea, Pittosporum, Tamarix and Jacaranda.

FRUIT NURSERIES.

72. Over 3,500 young trees were sold to amateurs and farmers in Malta and Gozo. The following are the varieties of trees supplied.

PEARS.

Beurre D'Amanlis
Butirra Hardy
Butirra Cla'rgeau
Settembrina
Tira Butirra
Coscia
Bambinella

PEACHES.

Trionfo Liscio
Amsden
Red Bird
Eureka
Alton
"Tal-Karmnu"

NECTARIS.

White
Red

PLUMS.

Nethley
Gold
Santa Rosa
Pruna di Frati
Japanese
Giant

APPLES.

Red
White

APRICOTS.

KAKI.

CHERRIES.

73. As stock for grafting certain varieties, generally imported from Northern Italy is at present unobtainable, we will be precluded from offering these varieties for sale next season, or until such stock is obtained.

PUBLIC PLANTATIONS, MALTA.

74. The work in connection with the Public Plantations consisted in watering, which was badly needed by all trees, hoeing the circular trough, staking, particularly those most exposed to strong winds, changing the wire securing the stem to stake, and pruning.

75. Consequent on the successive years of low rainfall, all trees suffered severely and many of the branches have died. The relative pruning of these trees has involved much time and labour.

76. The following trees have been planted instead of those destroyed :—

Ficus	35	Eucalyptus	10
Citrus	1	Pinus Halepensis	36
Tamarix	1	Casuarina	16
Quercus	6	Oleanders	6

More trees will be planted as soon as they attain planting size.

BUSKETT.

77. When the Army personnel were stationed at Buskett, some damage was inevitably caused to branches of decorative trees and also to young seedlings, by the pitching of tents as well as by their concrete emplacements.

78. The cultivation of trees which consisted mainly in hoeing, trenching, pruning, etc., was performed at the correct period.

79. During the war years, edible crops were grown between certain trees, this procedure has been discontinued as it tends to weaken the trees considerably.

80. Last year we had a heavy attack of Capnodis on the collection of peaches, plums and on the young stone fruit trees in the nurseries and as a result a number of trees have since died.

81. Owing to the low rainfall and consequent husbanding of water reserves, all trees are suffering badly and the fruit, such as apples, bambinella, plums, etc., have remained undeveloped.

82. A part of the collection of peach trees were irrigated once, the water was supplied to us by the Water and Electricity Department by filling the reservoir at "Ta Xewxa" Buskett. Of course the amount was not sufficient for our requirements.

83. The following trees have been planted :—

Apple trees	403	Bambinella	222
Loquats	92	Citrus	44

SANT ANTON AND VERDALA PRIVATE GARDENS.

84. The following trees, shrubs and climbers have been added to replace dead ones which include war casualties :—

Citrus	20
Acacia	4
Roses	105
Echium	4
Tamarix	3
Hibiscus	6
Bougainvillea	5
Nerium Oleander	6
Pinus Halepensis	3
Cupressus Pyramidalis ...	1

Kitchen Garden.

Banana	15
Fruit trees	14
Vines	15

RAINFALL.

85. The annual rainfall registered at Sant Anton Gardens was 15.04 inches which was distributed as follows :—

1945	September	.82	
	October	1.07	
	November	3.61	
	December	2.91	= 8.41
1946	January	4.70	
	February	.60	
	March	1.33	= 6.63

VITICULTURE.

86. The following are the varieties of mother plants that are now being cultivated in the nurseries :—

Rupestris du Lot.
Berlandieri 420.
Teleki 5.
Chasselas X Berlandieri 41B.
Teleki 8.

87. So far, 4,357 rooted cuttings have been planted, to become mother plants; of this number 2,237 are Rupestris du Lot, 783 Berlandieri 420A, 835 Teleki, 198 Teleki 5, 304 Chasselas X Berlandieri 41B. Most of the farmers refuse to buy rooted cuttings other than the Rupestris, which they plant on all kinds and varieties of soil.

88. The demand for rooted cuttings was very much greater than the supply, conseqquently, applicants had to receive 17% of their stated requirements. The number of rootlings was also low, owing to the hot wind (lupa) during the month of July which killed about 20% of the rootlings.

89. The hot wind also caused great damage to the crop of grapes at Buskett.

90. The area of Vineyards at Buskett has been increased by 5 tomnas, in which 2,906 rootlings have been planted. Some of these were grafted, others will be grafted later on.

G. Cousin,

Superintendent of Public Gardens.

APPENDIX 4.

Report of the Superintendent of Public Gardens for the year 1946-47.

Practically all Public Gardens have more or less been cleared of debris. The gardens whose boundaries were blasted by enemy action are still enclosed by means of a temporary barbed wire fence erected by the gardening staff.

2. All Public Gardens with the exception of Gżira and Blata-l-Bajda have been fully planted with flowering plants. Some of these could not thrive or develop satisfactorily owing to the shortage of rainfall during the previous months of January and February.

3. Owing to the shortage of water, summer flowering plants were grown on a very small scale, just sufficient for seed purposes. In order not to leave certain plots in some of the gardens barren, plants growing in pots were buried in the soil and so very little water was consumed, while the effect to the eye was satisfactory.

4. As war-damage repairs have not yet been carried out, all sections in public gardens were planted with different varieties of annuals in order to make the place attractive and pleasing to the public.

5. A new road in connection with the reconstruction of Floriana has been constructed across the lower part of Rundle Gardens. Steps were taken to uproot young trees and some of these were re-planted in tubs, while others were shifted to other sites in various public gardens, where vacant spaces existed.

6. The following is a list of trees affected by this new road.

Trees uprooted and re-planted.	Trees which had to be destroyed as they were too old for transplanting.
31 Olea Europea	6 Phoenix Canariensis
40 Myoporum	9 Phytolacca
2 Viburnum	5 Ficus
3 Hibiscus	3 Cercis Siliquastrium
23 Oleander	6 Lantana
4 Pittosporum	50 Myoporum (Hedge)
	5 Washingtonia

7. The following Citrus trees, Ornamental trees and Shrubs have been planted, added or replaced during the year :—

Sant'Anton.

50 Orange trees ; 4 Mandarines ; 100 Seville ; 22 Hibiscus rosa-sinensis ; 11 Euphorbia pulcherrima ; 2 Plumeria ; 2 Psidium ; 5 Lantana, 1 Euonymus ; 2 Myoporum ; 1 Datura ; 2 Polyganum Baldascianum ; 1 Oleander, 1 Sophora ; 1 Pinus ; 1 Viburnum ; 2 Casuarina ; 1 Quercus Robur ; 2 Callitris ; 3 Diosma ; 1 Cercis ; 1 Ficus religiosa ; 1 Eucalyptus ; 1 Persea ; 48 Bougainvillea ; 4 Loquats.

Other Public Gardens.

62 Oleander ; 2 Cupressus Pyramidalis ; 4 Poinciana Gillesi ; 1 Ficus Benjamina ; 4 Acacia Cyanophylla ; 10 Casuarina ; 8 Cercis Siliquastrum ; 2 Ficus Nitida ; 10 Eucalyptus Gomphocephala ; 10 Echium ; 2 Parkinsonia ; 34 Leonotis ; 48 Diosma ; 4 Duranta ; 17 Thuya ; 4 Pittosporum.

8. The large green-house at Sant'Anton has not yet been repaired ; therefore, delicate flowering plants, foliage plants and ferns could not be kept there. I regret to state that as we have no other suitable place, some of these plants have died of exposure as our climate is too inclement for them.

9. **Rainfall.** The total Rainfall registered at Sant'Anton Gardens was 15.81 inches and was distributed as follows :—

1946	September	.06
	October	2.36
	November	3.47
	December	6.66
1947	January	2.38
	February	.43
	March	.11
	April	.29
	May	—
	June	—
	July	.05
	August	—

10. Several Public Gardens were used on a number of occasions for holding fairs, tombolas, shows and other entertainment.

11. **Nurseries.** Work here consisted of :— Propagating trees, shrubs, climbers; Transplanting; training sowing etc. All this entailed constant attention and as a result I am pleased to state that all the nurseries are gradually becoming well stocked with young trees and shrubs.

12. Our best Nursery (Victoria Gate Nursery) has not yet been repaired. This Nursery is very essential for our needs as it is much sheltered and plants, such as Ficus, Olea, Palms, Ceratonia, Genista etc. grow quicker there than in any other nursery.

13. About 3 tomnas of land at St. Paul's Nursery, Rabat, have been converted into a friut nursery, some hundreds of young trees being planted there and grafted some months later. We are growing fruit trees here in lieu of Buskett which is very much affected by Capnodis. The nursery at Buskett also required to be trenched and manured, so as to be ready to receive other plants as soon as they are received from abroad.

14. As stock for grafting purposes, could not be obtained from abroad, the varieties of trees available for sale was limited. This notwithstanding, amateurs and farmers have been supplied with 1,258 trees consisting of the following varieties :—

Peaches		Pears	
May Flower	140	Bambinella	350
Trionfo Liscio	80	Cosc a	134
South Haven	24	Tira Buttirra	50
Tal-Karmnu	24	D'Amanlis	50
Amsden	20	Settembrina	26
Alton	15	Maskarella	24
Red Bird	12	Ta' San Gwann	10
Nectarines		**Apples**	
Red	38	Red	30
White	37	Mixed	24
Plums		Cherries	68
Satsuma	10		
Gold	14	Kaki	70
Santa Rosa	4		
Nethely	4		

As soon as stock is received steps will be taken to ensure our being able to cope with the great demand made annually by the public.

15. **Public Plantations.** The routine work in the Public Plantations consists of :— Pruning, Hoeing, Staking, Tying and Watering; all this demands constant attention.

16. As water was very scarce, it had to be brought from a reservoir at Naxxar Square. We have asked the Director of Public Works to clean and repair, if necessary another reservoir in the vicinity of Floriana in order that the trees may receive more water during the dry season.

17. The following is a list showing place, number and variety of trees planted :—

Poor House Avenue	4 Oleanders
Sliema, Tower Road	58 Tamarix 17 Casuarina
St. Julians, Grenfell Road	12 Eucalyptus
Valletta, Queen's Square	5 Ficus
Valletta, Palace Square	5 Ficus
Hamrun, St. Paul's Square	1 Ficus

18. **New Plantations.** The boundary of the children's recreation ground at Pietà was planted with 388 Myoporum plants, with barbed wire in it, in order to prevent vandalism from the part of the public.

19. As a trial about 50 Oleander bushes were planted at the Mgħtab (Baħar-iċ-ċaq — Salini Road), the cutting of pits in the rock and carting of soil was all performed by the gardening staff. I regret to state that vandalism here was so great that about ¼ of these plants, have been uprooted and stolen by unknown persons. The Police have informed us that their efforts to catch the culprits have proved either "fruitless" or gave "negative results". However, as the remaining plants are doing well, all efforts will be made to have this plantation greatly extended.

Erica bushes have been planted in the traffic island at Salini Road.

20. More evergreen trees will be planted where possible in lieu of deciduous ones. Eucalyptus Gomphocephala have already been substituting the Tamarix at Grenfell Road, St. Julians, where they are doing very well.

SANT'ANTON AND VERDALA PRIVATE GARDENS.

21. Sant'Anton and Verdala Private Gardens have maintained their usual attractive appearance. Extra efforts were made to keep Verdala Garden gay with flowering plants, owing to the fact that the Palace was serving as a children's Hospital and the beds of pretty flowers react favourably on the patients there.

22. Owing to the shortage of rain during the last 3-4 years trees such as Pinus and Cupressus which were growing in a comparatively shallow soil, have died; these were immediately removed and others planted in their stead — it is to be hoped that they will survive.

23. The following is a detailed list of trees, shrubs etc. planted in order to improve the gardens :—

136 Citrus	6 Euphorbia
1 Jochroma	2 Acacia Cyanophylla
1 Montanoa	13 Bougainvillea
14 Roses	22 Echium
14 Tamarix	3 Solanum
2 Thuya	8 Lonicera
32 Pinus	4 Cupressus

Buskett. The cultivation of trees and vines which consisted mainly in trenching, manuring, pruning, hoeing and other routine work — was punctually and satisfactorily carried out.

24. The attack of Capnodis on the collections of peaches and plums has been the cause of the death of 676 peach trees and 83 plum trees. This does not mean that these collections are a total loss as we have been propagating these varieties, and so far these young trees or graftlings have remained immune.

25. Scions of rosaceous trees for grafting pusposes have been supplied to many farmers.

26. The following fruit trees were planted during the year :—

36 Loquats	11 Kaki
65 Orange trees.	

27. Persons seeking advice, either personally or by correspondence, have had their requirements attended to.

28. Necessary steps were taken, following requests by the Directors, (Managers or Chiefs) of Phoenicia Hotel; St. Luke's Hospital; H.M.S. Falcon, Hal Far, for their gardens to be laid out in suitable plots. The results have been considered satisfactory by the parties concerned.

29. Most of the plants for these lay-outs have been supplied (on payment) from the Public Gardens.

30. We have also been asked to lay-out the gardens at King George V Hospital and gardens at the entrance of catacombs and kindred places at Rabat, Mġarr, Kordin heights etc. On most occasions I was accompanied by Dr. Baldacchino, the Director of the Museum.

31. Lectures and demonstrations are being prepared in order to be delivered to the gardening staff on the following subjects :—

Demonstrations.

a) Ecology — behaviour of plants of the same species when grown in different localities.

b) The pruning of trees growing in a district different to that where each gardener is stationed etc. etc.

Lectures.

a) Deciduous and evergreen trees, proper way and right time of pruning.

b) Tools and implements required for the garden.

c) Pollination.

d) Hybridisation.

e) Functions of different parts of the plant.

f) Classification of plants.

g) Different methods of propagation. etc. etc.

32. Seeds and seedlings were supplied, free of charge, to be grown by invalids in the gardens of Charitable Institutions.

VITICULTURE.

33. **Vines.** All farmers are intensifying the planting of vineyards on a large scale; this is mainly due to the easy disposal of the crop as well as for the price obtained.

34. It is estimated that during 1946-47 the number of tumoli planted in Malta amounted to 235. The demand for rootlings was much greater than the supply and each applicant received 40% of his request. All efforts are being made to have the supply greatly increased.

35. Farmers attended lectures on the growing of the vine with particular reference to the Rupestris, which in the long run is not suitable for all our soils. Reasons were given for its behaviour in different localities in comparison with other vines and suitable varieties for different soils and subsoils were recommended.

36. The following are the varieties cultivated and sold to farmers by the Department :—

Dupestris du Lot	Teleki 8
Berlandieri 420A	Chasselas x Berlandieri 41B
Teleki 5	

37. Farmers in the St. Paul's Bay district were grafting the American vine using the old cleft grafting, i.e. splitting the stem and inserting two scions, one on each side of the cleft. It was explained to the farmers that this method leaves the stock rather weak and that it has been found much better if only $\frac{1}{2}$ of the thickness of the stem is split and inserting only one scion. Tying is not generally required but mould must be heaped over the graft. In case of dry weather they are kept moist by means of watering with a rose attachment to the hose pipe. Demonstrators were sent to show the farmers how this is done and to give them every help.

38. It has been noticed that the vines in the Experimental Vineyard at Pwales have been dying for the last 2 years.

39. Vines of the same variety and age (14 years old) in the Experimental Vineyard at Rabat are a perfect picture of health and bear heavy crops.

40. In the case of Pwales it is presumed that the salinity of the subsoil is responsible for the mortality.

G. Cousin,

Superintendent of Public Gardens
and Plantations.

APPENDIX 5.

Report by the Plant Pathologist for the period October 1938 to September 1946.

I assumed charge of this Section in September 1939 in virtue of my appointment as Plant Pathologist to this Department.

2. In view of the subsequent outbreak of hostilities and the consequent shortage in labour and scarcity in chemicals, Section activities had perforce to be restricted throughout the greater part of the period under review. Urgent staff expansion could not, as a matter of fact, be effcted before late in 1943, while it was only towards the middle of 1944 that existing stocks in fungicides and insecticides could be adequately replenished. In spite of such limitations, however, every effort was made throughout the afore-said period to continue the normal prewar routine control measures and in so far as circumstances permitted, plant disease control work was persevered throughout with unrelenting pressure.

3. **Phytopathological control of imports and exports.** During this period, phytopathological control of imports and exports decreased considerably owing to the existing war conditions and at one time ceased altogether i.e. 1941-1943. Imports subject to phytopathological inspection were however resumed in October 1943 and as from that date up to September 1946 3,177 inspections of imported and exported vegetable produce were effected including :—

13 consignments	in 1943
424 consignments	in 1944
1,089 consignments	in 1945
1,651 consignments	in 1946

Inspection of imports involved a total of 426,023 parcels classified as follows :—

Citrus	325,316 parcels
Stone Fruits	3,025 parcels
Other Fruits	5,997 parcels
Vegetables	1,682 parcels
Potatoes	90,000 parcels approx.
Bulbs and seeds	3 parcels

while inspection of exports covered a total of 2,857 consignments ranging from citrus to miscellaneous seeds, prickly pears, water-melons etc. etc.

4. **Labour.** Throughout the greater part of the period under review the skilled labour of this Section, apart from its normal field duties, was also actively engaged on the many schemes which were entrusted to this Section during the war period. It was also called upon, on several occasions, to perform duties extraneous to the Section which were connected with the war effort such as the refilling of bomb-craters at Ta' Qali aerodrome, the immediate transfer of Government stores, urgent demolition of blitzed Government buildings, etc. It must be stated in all fairness to all concerned and to their full credit that similar work was always undertaken and carried out unflinchingly and cheerfully by all concerned even in the face of incessant enemy action.

With the cessation of hostilities, distribution of labour gradually reverted to normal. Thus throughout the period 1944-1946 control of plant tree diseases and insect pests extended over a total of 3,834 working days while work on field crops amounted to 2,578 working days involving a total of 132,786 trees and 3,874 tumoli land under miscellaneous field crops including potatoes, onions, cruciferous crops, tomatoes etc. A summary of the fruit trees treated includes :—

Citrus	25,028
Vines	95,400
Combined rosaceous and stone fruit trees	11,484
Miscellaneous trees	874

5. **Field work.** During and immediately after the blitz period the activities of this Section were mainly concentrated on the prevention and control of fungous diseases and insect pests on crops of economic importance in accordance with the policy of increasing as much as possible local food production. Among such crops, potatoes, cereals, cabbages, cauliflowers, kohl-rabi, peas, beans, melons, tomatoes, citrus etc. figured prominently and routine treatments on such crops were not only continued but intensified and whenever possible, with the scarcity of fungicides and insecticides prevailing at the time, improved upon.

As soon as the war clouds started drifting away namely from 1944 to 1946 field inspections and operations were noticeably increased. Inspections throughout this period as a matter of fact totalled 1,128 while the area under treatment averaged during this period :—

1,508 tumoli approx. ... ... under potatoes
1,834 tumoli approx. ... ... under vegetables
532 tumoli approx. ... ... under fruits

Fumigation and experimental work were moreover resumed. As regards fumigation, carbon busulphide fumigation of seed potatoes, particularly of the seed held over from the spring crop for winter sowing, was resorted to as a means of control against potato tuber moth i.e. Phthorimea operculella Zell. Formerly, such seed used to be heavily ravaged through the incidence of this particular moth, but experience has shown that, given proper storage, as already indicated in a leaflet on the subject published by this Department and circulated amongst farmers, and provided fumigation was carried out in the early stages of infestation and repeated whenever required, it was possible to maintain such seed relatively immune from the pest in question throughout the spring and summer months. It is gratifying to note that similar procedure is in practice in other parts of the Colonial Empire, but the time factor, as well as the possibility of attenuation of the germinative capacity of the tubers concerned, cannot possibly be altogether disregarded. Hence, while the efficacy of carbon bisulphide fumigation cannot in any way be doubted, it would seem advisable to envisage means for a more rapid and more radical disinfestation of potatoes in question.

As regards experimental work the development of selective weed-killers during the period under review gave hopes that the weed problem, particulary in connection with the obnoxious Oxalis Cernua, would eventually be satisfactorily solved. Such weed-killers, as a matter of fact, present none of the disadvantages normally associated with the use of sulphuric acid, since they are non-corrosive, non-poisonous and non-inflammable, being besides of easy application either in the powder or liquid form. The sample experimented with however i.e. "Agroxone" containing methoxone, kindly supplied by I.C.I. could not be applied to crops other than corn and was altogether contraindicated for use amongst vegetable crops, flowers and fruit. Consequently, its use has been somewhat restricted, but preliminary experimentation in this direction has established that a 2% liquid Agroxone solution is more effective than a 1% solution in checking the development of weeds, locally infesting corn, such as poppies, cockles, swordlily, medocks, etc.

Further preliminary experimentation was also conducted during this same period in connection with the control of slugs and snails and in relation to the potentialities of gammaxane as a means of control against sucking insects, particularly in vegetable gardens and in fruit orchards. With the former end in view, a recent proprietary compound elaborated in the United Kingdom and extensively applied over there for this specific purpose, i.e. Meta, was experimented with but the results achieved under local conditions cannot be considered as altogether satisfactory. More extensive experimentation in this direction seems to be necessary. On the contrary, the efficacy of a gammaxane powder for the control of aphides on vegetable and fruits became evident from the very start and the beneficial effects resulting thereof as well as the subsequent prolonged period of disinfection cannot but commend this preparation for future use.

6. **Legislation.** Throughout the period under review the main enactments refer to the control of fungicides and insecticides which were particularly scarce throughout the war years and to the prevention of introduction into these Islands of the dreaded

Colorado beetle. In order to regulate the sale of copper sulphate as a matter of fact Food and Commerce Control Orders Nos. 40 and 103 of 1940 and 1941 respectively were issued establishing the maximum price at which copper sulphate in bulk and in retail could be disposed of while in 1942 the control of sulphur regulations were enacted allocating distribution and dilution of this important dust to this Department. Measures for the prevention of the introduction of the Colorado beetle into these Islands were taken by the enactment of Government notices Nos. 461 and 182 of 1939 and 1940 respectively, prohibiting the importation into these Islands of vegetable produce from Holland, Switzerland, Germany, etc.

7. **Advisory work and press contributions.** Throughout the period under review four leaflets were published dealing with problems of the moment, namely :—

i. preventive spraying against potato blight
ii. potato tuber moth control
iii. miscellaneous insect pests of vegetable crops.

This material was also made available for publication at a later stage.

Advisory work increased considerably also during this period in view of the "Dig for Victory" campaign. Many allotment-holders as a matter of fact asked for advice and, in the majority of cases, for service by this Section particularly amongst the troops stationed at the time in these Islands. In this connection lectures were frequently givn by the staff of this Section, on plant disease prevention and control, to troops in war stations.

Much material was also provided in connectioin with the farmers' half-hour weekly broadcasts. Farmers were kept fully informed as to the measures of control envisaged by this Department against individual pests or diseases.

Throughout the period 1944-46 these activities were wherever possible maintained, while technical advice was estimated to have been extended to approximately 2,153 applicants to avail themselves of the skilled labour at the disposal of this Section.

8. **Schemes.** Throughout the greater part of the period under review additional duties had to be assumed by this Section in connection with the various schemes which were applied by this Department during the war years.

The scheme placed under the charge of this Section included the :—

i. Citrus Control Scheme
ii. Sulphur and Copper sulphate Distribution Schemes and
iii. Vinification of Buskett Grapes.

The Citrus Control Scheme was operated by this Section and involved the collection and weighing of all citrus fruits within these Islands requisitioned at the time by the Government, its grading and its subsequent re-distribution for rationing purposes. Detailed organization was therefore essential coupled with properly organized transportation and supervision. Altogether 2,343,252 citrus fruits mainly oranges and tangerines were collected corresponding to 195,271 dozens and a total of 2,321,340 citrus fruits corresponding to 193,445 dozens were issued for rationing purposes. Losses through grading, deterioration etc. were therefore negligible amounting to less than 1 per cent. Deteriorated fruits were at a later stage utilised for the production of marmalade which was one of the few luxuries issued occasionally in the ration allowance during the late blitz period. It is, therefore, obvious that, apart from other considerations, this scheme from the point of organization and supervision was worked out smoothly and efficiently.

During the blitz period namely from 1941 to 1943 an acute shortage of fungicides and insecticides and precisely of copper sulphate and sulphur developed. In view of the practical impossibility of replenishing stocks adequately (some limited sulphur stock was as a matter of fact actually imported by underwater craft) it was finally decided to ration such chemicals on the basis of cultivated area. It was thus that the copper sulphate and sulphur distribution schemes came into operation and were entrusted to this Section. Stocks of the chemicals in question were centralised under the control of this Department and while sulphur was diluted with chalk dust under the direction of this Section, old-standing stocks of copper sulphate crystals were suitably ground and proportionately mixed with available stocks of copper sulphate powder.

Bagging and distribution was also under the charge of this Section and in connection with the sulphur scheme alone some 17,445 bags were thus distributed. It is a fact that such schemes entailed considerable labour but it is at the same time undeniable that such control at such critical times ensured a more equitable distribution of the chemicals concerned and certainly helped to avoid hoarding which would have had deleterious effects on such crops as tomatoes, melons, etc. through reduced stocks in circulation.

The control of the Local Wine Industry, in terms of the Wines (Control of Production and Shipment) Regulations 1943, was also assigned to this Section. To this end, means were found to determine the fermenting capacity of individual vintners with a view of establishing allocations in grapes, sugar and chemicals. A working arrangement was evolved based on the cubic capacity of the vats and availability of storage. While such an arrangement could not be considered as altogether satisfactory it served for the time being to meet the requirements of the majority of vintners.

In 1943 and again in 1944 the choice wine grape varieties cultivated at Buskett were processed into wine under the direction and supervision of this Section. Such varieties included Barbera, Trebbiano, Cataratto, Gelleuza, Moscato, etc. and were originally planted in order to confirm the possibility of cultivation of choice wine grapes within these Islands. The total weight involved at no time exceeded the 100 qantars and consequently the charge that the limited quantity of wine resulting thereof i.e. approximately 7,000 bottles might jeopardise the sales of stocks held by private vintners was in no way substantiated by facts. Typical wines were thus produced of a standard above the local commercial average. Marketing of such wines was also undertaken by this Section and since the produce was well received by the public it was possible not only to recover expénditure but also to realise a small margin of profit. Samples of the wines in question were also forwarded to the United Kingdom in order to ascertain the possibility of marketing future consignments but since such wines had not been sufficiently aged in wood they arrived at the place of destination in a deteriorated condition. It is symptomatic however that even in this state it was acknowledged at the time that such wines afforded possibilities and that after the lapse of two years request for fresh samples and trade enquires were forthcoming from well-known English firms. It is indeed regrettable that such practice had to be discontinued in later years.

Gerard J. Peralta,
Plant Pathologist.

APPENDIX 6.

Report by the Plant Pathologist for the year 1946-47.

SECTION ACTIVITIES.

a. **Phytopathological control of imports.** During the period under review 363 consignments of imported agricultural produce were subjected to phytophathological inspection including :—

Citrus	144 consignments
Stone fruits	86 consignments
Other fruits	43 consignments
Vegetables	83 consignments
Bulbs and seeds	37 consignments

corresponding to 158,148 individual parcels classified as follows :—

Citrus	79,208 parcels
Stone fruits	28,839 parcels
Other fruits	32,252 parcels
Vegetables	17,726 parcels
Bulbs and seeds	123 parcels

During this same period eleven consignments were refused entry including consignments of bulbs, vegetables and fruits from Holland, Italy, etc. on phytopathological grounds.

It is thus obvious that in comparison with the preceeding year i.e. 144 consignments the number of port inspections has considerably increased since it has almost trebled itself and that hence an expansion of the service in this direction is in the long run inevitable if the present control on imports is, as seems likely, to be maintained.

b. **Phytopathological control of exports.** General certificates of freedom from disease were issued during the period covered to a total number of 105 consignments of local agricultuarl produce involving :—

35 consignments of	miscellaneous fruits
12 consignments of	potatoes
58 consignments of	bulbs seeds etc.

In the export of vegetable produce by the local military authorities phytopathological certification is now being insisted upon particularly in connection with potato moth infestation. The consignments of fruit inspected and authorized for export included prickly pears, citrus, water-melons, peaches, apples, etc.,

c. **Labour distribution.** The total number of working days involved amounted to 3,186.

Control of tree diseases and insect pests extended over a total of 2,680 working days and covered a total number of 186,400 trees including :—

Citrus trees	12,500
Combined rosaceous and stone-fruit tree	2,650
Miscellaneous ornamental trees	1,250
Vines	170,000

Work on disease and insect pest infestation on field crops extended over a total of 596 working days and covered a total area of 1,230 tumoli land including :—

Under cruciferous crops	540 tumoli
Under solanaceous crops	360 tumoli
Under miscellaneous economic crops i.e. onions, wheat, sulla, etc.	250 tumoli
Under miscellaneous ornamental crops i.e. carnation, sweetpeas etc.	80 tumoli

d. **Field inspections.** During the period under review 564 private inspections in farm garden and plantation were attended to covering a total of 21,756 miscellaneous fruit trees including :—

Oranges	2,403
Tangerines	436
Lemons	465
Pears and Apples	1,374
Stone Fruits	401
Other Fruits	1,177

amounting to 6,256 in private orchards while approximately a further 15,500 miscellaneous fruit trees mainly citrus, rosaceous fruit trees, vines etc. were inspected in Government lands.

e. **Advisory work and press contributions.** Throughout this same period advice on phytopathological control was given to 1,100 applicants who were also afforded the opportunity of utilizing the services of the skilled personnel attached to this Section.

Press contributions to "Il-Bidwi" averaged one or two articles monthly on matters of specific phytopathological interest while a leaflet on a relatively new disease of citrus i.e. die-back of undetermined origin was also published.

Material was also extensively provided for the weekly agricultural broadcasts, particular stress being laid both in press articles and in weekly broadcasts on the perils of Colorado beetle infestation. In this connection illustrated cliches detailing the life-cycle of the pest in question were imported and distributed on buses plying to and from the main agricultural areas, schools, police stations, etc.

f. **Activities proper. Chemicals.** Plant protection measures were also during this time reorganised in order to permit the introduction of chemicals of proved value and to facilitate, within the limits possible, field operations. Among such chemicals introduced, tar-oil washes, lime-sulphur preparations, nicotine sulphate 40%, combined sulphur-nicotine and combined copper sulphate-sulphur dusts, ready-prepared Bordeaux mixture and Agral 2 may be mentioned.

Nicotine sulphate is estimated to be more effective than the ordinary pyrethrum preparations in common use for the control of sucking insects and has been most favourably received by farmers throughout the Islands.

Tar oil and lime-sulphur are of undoubted value as a winter wash and as means of prevention and control of scab on apples and pears i.e. Venturia sp. and leaf curl on peaches i.e. Taphrina deformans, and represents an improvement on previous exclusive treatments with Bordeaux.

The combined sulphur-nicotine dust is invaluable for the combined treatment of powdery mildew and aphid infestation, common to fruit trees, particularly in late spring, while the combined copper sulphate-sulphur dust has been found useful in the combined control of downy and powdery mildew of the vine, especially in vineyards where treatment against the former disease had been neglected.

The substitution of the soft soap, formerly incorporated with sprays, by Agral 2 is intended to increase both the spreading and adhesive properties of the spray in question, while ready mixed Bordeaux mixture has greatly facilitated disease control operations in orchards, where, owing to their limited extension, its use was formerly greatly handicapped.

Miscellaneous proprietary compounds raging from preparations containing rotenone to other embodying mercurial compounds were voluntarily submitted to this Section for field trials by individual private firms. The results of such investigations were in due course communicated to the supplying firm.

g. **Legislation.** The importation into, the planting of and the export of vegetable produce is governed by specific phytopathological legislation intended to restrict the possibility of entry of dangerous insect pests and harmful plant disease, to localize

eventual outbreaks and to safeguard the export of phytopathologically sound local produce. In June 1947 a further enactment was added to this legislation, namely Government Notice No. 285 intended to restrict the importation of transhipped potentially infested vegetable material and to subject to phytopathological inspection all imported consignments of vegetable produce irrespective of nature and of place of origin. Similar measure cannot obviously but increase the already extensive supervisory duties of this Section but in view of the alarming spread of Colorado beetle in the Mediterranean region it is considered advisable to resort to such expedients in order to retard as much as possible the introduction of this dangerous pest within these Islands.

h. **Fruit Tree Diseases.** Throughout the period under review a peculiar die-back on citrus manifested itself in the Attard-Lia-Balzan triangle causing considerable havoc within the citrus groves of these Islands. This die-back seemed to be more prevalent on tangerines than on citrus proper, was characterised by a rapid onset, a total lack of root symptoms in the majority of cases and a fatal issue within a relatively short time (symptoms suggestive of "citrus blast") and seemed at the time to be restricted to the localities mentioned above. Samples of affected twigs were immediately forwarded by air-mail to the Commonwealth Mycological Institute of Great Britain, to the "Stazione Sperimentale di Agrumicoltura" of Acireale, Italy and to the Department of Agriculture of Palestine. The result of similar investigations demonstrated the presence on the affected twigs of a fungus normally saphrophytic in origin namely of the Colletotrichum gleosporoides but which in conditions of lowered resistance might turn parasitic causing considerable havoc. It is impossible to determine with certainty the main factor lowering the resistance of the trees in question since as is well known this may be caused by a multitude of causes i.e. inadquate manuring, pruning, watering, cultivation etc. but it is highly probable that the main contributing factor is essentially mechanical in nature, namely an abnormal concentration of salts in the soil resulting as a consequence of the prolonged drought persisting over a period of years. While all practicable measures have been taken to meet the emergency, investigations are still proceeding in this connection.

1. **Experimental.** Details of experimental work are attached herewith (Table A. B. and C.) and as can be seen such work was undertaken in connection with the newly discovered insecticides commonly known as DDT and gammaxane (666).

Table A concerning the control of Mediterranean fruit-fly i.e. Ceratitis capitata confirms that treatment with a 20% concentration DDT has yielded but insignificant results. While fruit-fall in untreated trees amounted to a total of 316 that in treated trees was only slightly less i.e. 227, the difference in fruit-fall amounting to only 89. Considering the cost of the chemical involved and the labour charges required it is obvious that the results of similar experimentation cannot be considered as economically profitable. It has been ascertained however that similar spraying with DDT improves considerably the keeping qualities of the fruits on the trees and this line of approach seems to be worthy of further investigation. Information at hand has recently confirmed that higher concentrations of DDT i.e. 50% may yield satisfactory results in this connection and it is proposed to undertake further experimentation in the near future as soon as circumstances permit.

Table B concerning cutworm control on lettuce seedlings demonstrates that Agrocide 2 (a proprietary gammaxane) is only moderately effective in this regard. Over a total number of 94 seedlings treated, as a matter of fact, not one was lost through cutworm infestation but during the same period of time only 10 out of a total of 94 seedlings were lost through cutworm attack in the adjacent control plots. Subsequent experimentation with another type of Agrocide, namely, Agrocide, 7, has however confirmed the extreme effectiveness of gammaxane-based baits in this particular direction.

Table C concerning the effect of gammaxane dust on cabbage caterpillars i.e. Pieris brassicae and rapae details the results achieved. It will be noticed that these dusts ensure a 100% kill particularly in newly-hatched larvae and guarantee freedom from re-infestation for a non-negligible period of time i.e. 7-10 days while their action appears to be accelerated by a slight addition of derris. Control of these obnoxious pests is thus now possible and the time is not far when farmers will start resorting to these relatively new but most effective measures of control.

FIELD ACTIVITIES.

Biological control. Biological control of the fluted scale insect, Icéryia purchasi, by its natural enemy the ladybird Novious cardinalis, has now developed to such an extent that request for colonies of this beneficial insect are few and far between. Throughout the period under review, in spite of the marked recrudescence of fluted scale, 25 colonies were in all distributed and in the majority of cases, examination revealed that the outbreaks of Iceryia were already under the control of the ladybird, thereby confirming the impression that this ladybird is now thoroughly naturalized in these Islands, reappearing annually in sufficient quantities to check efficiently the fluted scale in the majority of groves.

The same applies to Aphelinus mali, the natural enemy of the Woolly aphis, Eriosoma Lanigera Hausm, imported into these Islands about ten years ago and now thoroughly acclimatized, recurring naturally and exerting its beneficial influence in the main apple orchards of these Islands.

The parasite Apanteles glomeratus, which normally manages to check in part both Pieris rapea and Pieris brassicae, was unfortunately not present during the period under review in sufficient numbers to cope with the white cabbage butterflies infestation and extensive resort had to be made to artificial measures to deal with the emergency.

Nor were the ladybirds, chief amongst which Chilocorus bipustulatus, Coccinella 7 — punctata and Coccinella 11 — punctata, normally constituting the most effective barrier against aphid infestation, present in their usual number, with the result that during the current year aphides were conspicuous on most cultivated crops, fruit trees and ornamental shrubs.

Potatoes. It is indeed regrettable to note that, in spite of an intensive propaganda extending over a number of years, the majority of farmers still refrain from spraying their winter crops with Bordeux mixture as a means of prevention against potato blight i.e. Phytophthora infestans. Rather fortunately, blight attack was not heavy on the crop in question last season since the climatic conditions prevailing throughout were not on the whole favourable towards its development. It managed, however, to make its appearance in various localities, but the damage resulting thereof was not particularly noticeable.

The winter crop of potatoes suffered moderate damage however from a condition known locally as "glata" due essentially to rapid variations in temperature. Very little can be done to prevent this mechanical injury except to advice farmers as to measures indicated in order to reduce within the limits possible the damage due to factors totally beyond our control.

The spring crop was heavily infected with potato tuber moth, i.e. Pthorimea operculella, Zell, in view of the prevalently dry conditions prevailing throughout this season. It is regrettable to note that not all farmers resort to the cultural practices, intended to reduce the risk of infection in the field, specified in an appropriate leaflet by this Department issued and unless the whole-hearted cooperation of all farmers is forthcoming in this direction, definite results cannot be achieved. Meanwhile, carbon bisulphide fumigation is being extensively practised with salisfactory results, but the time factor cannot obviously be disregarded.

Black-leg of the potato i.e. Bacillus phytophthorus App. made itself apparent in certain localities on the summer or fina crop. This crop showed also sign of a virus disease of potato, i.e. leaf roll, though it was somewhat restricted in spread. In both cases, affected plants were picked out and destroyed and a thorough soil sterilisation by soil injections was resorted to with a view of limiting spread.

Throughout the period under review 310 tumoli land under potatoes were in all treated extending over a period of 130 working days, while some 6,000 bags of potatoes were fumigated against moth with gratifying results.

Vegetable crops. The early spring generation of the cabbage butterflies i.e. Pieris brassicae and Pieris rapae, particularly the former, was prominent during the period under review and resort had to be made to extensive spraying in order to check the damage. Spraying with nicotine sulphate, especially in the early larval stages, was found most effective and was much in demand by a great number of farmers throughout the Island.

The use of nicotine sulphate on cruciferous crops presents besides the advantage of controlling at the same time Aphis brassicae, as well as the two minute beetles i.e. Haltica oleracea and Phyllotreta nemorun, that appear more or less regularly every year in varying quantities in the seed beds of cabbages, cauliflowers and kohl-rabi.

Spraying with Bordeaux on the onion and garlic crops for the combined control of smudge i.e. Colletotrichum circinans and of rust, i.e. Puccinia allii was also continued. Although impressive results are not thereby achieved, it is possible in this way to restrict at least the further spread of the diseases in question.

Apart from rust, i.e. Uromyces appendiculatus, Spotting i.e. Phyllosticta phaseolina and broom-rape infestation i.e. Orobanche crenata, beans suffer heavily every year from Aphis rumicis. The practice usually followed locally of topping the plants soon after inflorescence, in order to help the formation of large pods, does contribute to restrict somewhat similar invasion, but recourse has always to be made to pyrethrum or nicotine sprays in order to achieve definite results. Normally, this latter chemical is incorporated in a combined copper-sulphate-nicotine spray, with a view of controlling rust at the same time. With regard to broom-rape, farmers cannot yet understand the importance of removing this parasite before it has time to flower.

Sulphur dustings against powdery mildews, i.e. Erysiphe communis on peas, Erysiphe cichoriceanum on cucumbers and Erysiphe polygoni — D.C. on tomatoes, particularly on the late or Rabat crop were applied on an unprecedented scale and as was to be expected, satisfactory results were everywhere obtained.

Throughout the period under review 920 tumoli land under vegetable, forage, and ornamental crops were treated engaging the activities of the labour of this Section over a period of 367 working days.

Vines. It is not inappropriate to record that the tendency of planting vines on free stock still persists, particularly in certain localities of Malta. This, of course, accounts for the continued presence of Phylloxera vastatrix in our midst and it is undoubted that such a practice, if persisted in, is bound to retard viticultural progress in these Islands.

Last year, vines were on the whole relatively immune from downy mildew i.e. Plasmopora viticola, in view of the dry climatic conditions prevailing. The preventive spraying with Bordeaux in vineyards, private gardens and public plantations was however attended to regularly.

Powdery mildew of the vine i.e. Oidium Tuckeri was on the whole more frequent than downy mildew, though it cannot be said that a really virulent attack developed. The combined copper-sulphur dust was adopted in this connection on a large scale and gave throughout satisfactory results, particularly in private vineyards where copper sulphate treatments had been neglected.

Pruning of vines during the dormant season i.e. January was extensively carried out and demand for skilled labour in this direction is increasing.

Throughout the year in question a total of 170,000 vines was dealt with engaging the activities of this Section for 450 working days.

Citrus. Fruit fly infestation, Ceratitis capitata Wied., was very marked throughout the period under review, particularly during September, and something more than the usual amount of havoc was wrought by this pest. Trapping was adopted, but it is needless to point out that this form of control serves only as a palliative measure and that as long as its use is not enforced throughout the citrus groves of these Islands, it is bound to yield only partial results.

Scale insects, particularly Chrysomphalus dictyospermi, Mytilapsis citricola, Parlatoria pergandei and Lecanium hesperidium, were prominent by their presence throughout the year in the main citrus orchards of these Islands. In this connection, it has been ascertained that spraying with white oil emulsion during the late dormant season, i.e. February—March, is much more effective than later spraying, leading thereby to an economy of both labour and chemicals.

Citrus trees suffered also considerably from sooty mould i.e. Limacinia Penzigi Sacc. on foliage as well as from Toxoptera aurantii during the spring months. In the former case, the elimination of the primary cause of the disease was imperative before further treatments could be proceeded with, while in the latter nicotine sulphate yielded excellent results.

Extensive treatments against canker and lichen infestation on citrus were also undertaken during the period under review, particularly in public plaantations. It is undoubted that the proper refilling of cankered cavities definitely prolongs the life period of the trees in question while lichens disinfestation strengthens and stimulates the treated trees towards the production of a more abundant and better — sized crop.

Mention has already been made under Fruit-Tree Diseases of the peculiar die-back that manifested itself on citrus in the Attard-Lia-Balzan triangle during the period under review and of the result of investigations arising thereof. With a view of meeting the emergency heavy pruning combined with adequate manuring was resorted to and in some cases yielded encouraging results. Meanwhile soil samples collected at varying depths from around affected trees have already been forwarded abroad for chemical examination.

Throughout the period under review 12,500 citrus trees were in all treated engaging the labour of this Section for a total number of 1,030 working days.

Fruit trees. Wood-borers, mainly Cerambix miles, Zeuzera pirina and Capnodis tenebrionis were very much in evidence last year by their nefarious work on pears, apples, and pip-fruits generally. The most destructive are undoubtedly Cerambix and Zeuzera and since treatment against such pests involves skill and time, it is regrettable that in most orchards their activities remain to a large extent unchecked. The normal procedure consists of course in the localization and destruction of the larva within the wood.

Capnodis infestation was particularly marked at Buskett on peaches and plums during the period under review and in spite of the radical measures enforced innumerable trees eventually succumbed to the attack. Such measures included :— large-scale worming, excavation of trenches in an effort to localize infestation, painting of the lower part of the trunk of affected trees with arsenical solutions, extensive carbon bisulphide soil disinfestation, etc.

Scab, i.e. Venturia sp. on apples, pears and bambinella, seems to be present everywhere mainly due to the fact that fruit growers have never been trained to diagnose the disease, nor to adopt effective countermeasures. The result is that the local fruit of these varieties in these Islands, although of exquisite taste, is so deformed that it is scarcely marketable. Gradually, fruit-growers seem to be realising the value of effective, timely spraying in this connection.

Codling moth i.e. Carpocapsa pomenella seems also to be present in the majority of local apple orchards, where it is responsible for premature fruit-fall and for a marked deterioration in the quality of the fruit in question. It has been established that a 75% reduction of the damage done by this pest is possible by timely and accurate spraying.

Throughout February-March, almonds suffered heavily from almond moth infestation i.e. Diloba coerulocephala and this Section was practically inundated with requests for treatment. This voracious insect has shown signs of extending its activities to other fruit trees and only immediate and drastic measures can cut short its ravages. Fortunately, this Section is in a position to deal effectively with the pest in question.

Ceroplastis rusci attacked heavily fig trees throughout the period under review and could only be brought under eventual control after extensive and prolonged spraying. The harmful effects of this obnoxious scale insect on the trees in question were noticeable in the resultant reduced crop.

Sulphur treatments against a variety of powdery mildews on various fruit trees were also extensively undertaken, the combined sulphur — nicotine sulphate dust being particularly useful, especially in the late spring months, to combat combined aphid plus mildew infestation.

Pruning of fruit trees was one of the main functions assumed by the skilled labour of this Section, particularly in September and January. Private demand for work of this kind is on the increase.

Throughout the season under review 2,650 combined rosaceous and stone fruit trees were in all treated not including of course an approximately equal number of such trees in Government plantations.

Gerard J. Peralta,
Plant Pathologist.

Table A.

CERATITIS CONTROL 20%

Wettable DDT

No. of rows	No. of trees	No. of treatments	Nature of	Period covered	Pre-Experimental removal	Fruit fa
1	5	—	—	43 days	—	306
1	5	5	3–.5% DDT 2–.5% DDT plus Pysect	43 days	122	227

DETAILED FRUIT FALL

Week-ending	Tested	Control
15 10 46	7	10
26 10 46	7	18
2 11 46	76	61
16 11 46	53	71
23 11 46	38	72

Table B.

CUTWORM INFESTATION ON LETTUCE SEEDLINGS

EXPERIMENTATION WITH AGROCIDE 2

No. of seed beds	Nature of	Arrangement	No. of seedlings	No. of treatments	Dosage	Less
8	A. 4 newly planted	A. 2 control 2 treated	A. 70 control 70 treated	A. 1.	A. 1–2 lbs.	A. Control 10 plants
						A. Treated nil
	B. 4 already planted	B. 2 control B. 2 treated	B. 24 control B. 24 treated	B. 1.	B. 1–2 lbs.	B. Control nil
						B. Treated nil

Table C.

CABBAGE CATERPILLAR CONTROL

The newly discovered insecticidal powder, Gammaxane, has been experimented with in connection with the control of cabbage caterpillar i.e. Pieris brassicae and Pieris rapae.

The economic importance of this particular pest is too well known to need any further elucidation, since it constitutes the main pest of cruciferous crops in these Islands.

The results achieved may be tabulated as follows :—

a. **Laboratory test.**

No. of larvae	Nature of	No. of dusting	Kill	Time limit
60	newly hatched	1	100%	80 minutes
60	medium-sized	1	100%	118 ,,
60	large-sized	1	100%	130 ,,

It is thus obvious that powder in question :—

i. ensures in all cases a 100% kill, regardless of stage of development

ii. exerts its maximum insecticidal action on newly-hatched larvae.

b. **Field test.**

No. of plots	No. of larvae	Nature and No. of dusting	Kill	Time	Freedom from re-infestation
2	60 each mixed	Gammaxane—1	100%	24 hours	7–10 days
1 in between	,, ,, ,,	Control	—	—	—
1	,, ,, ,,	Gammaxane and derris—1	100%	3 hours	7–10 days

It is clear that Gammaxane :—

i. ensures a 100% kill in the field

ii. its action appears to be accelerated by the addition of approx. one fourth weight of derris powder

iii. guarantee freedom from re infestation for a maximum of 7-10 days. Even after this period, infestation is very slight.

The occasion was availed of in order to observe the deterrent potentialities of this insecticide. Egg-laying however by the adult form on treated plant persisted, though it appeared to be rather limited and occasional.

APPENDIX 7.

Report by the Principal Government Veterinary Surgeon covering the period October 1st, 1938, to September 30th, 1946.

IN THE ABATTOIR.

A. Slaughterings.

During the period under review 358,397 food animals were slaughtered in the Malta and Gozo Civil Abattoirs as detailed hereunder:—

	Cattle	Sheep and Goats	Pigs	Lambs and Kids	Equines
Malta	29,066	100,938	123,282	21,388	4,115
Gozo	4,912	17,329	21,029	36,283	51
Total ...	33,978	118,267	144,311	57,671	4,170

2. Appendix I is a return of yearly slaughterings. It will be noted that in the case of cattle there was a rapid drop in the slaughter rate between 1939 and 1941. This is accounted for by the fact that at the outbreak of hostilities with Italy the Island was cut off from all outside sources on which it has always been dependent for its supply of fresh beef. During the same period there was a compensatory rise in the pig-slaughter rate. At the time Malta was still producing enough first quality pork for its own requirements and a surplus of pigs for export, mainly to Tripoli. This was the outcome of the farsighted policy of encouraging pig breeding by the prohibition of the importation of live pigs (except of approved breeds for the improvement of the existing stock) and of chilled and salted pork. In the case of goats the slaughter rate reached its highest peak in 1942, i.e., when the goat slaughter policy was resorted to with a view to easing the precarious food situation. The year 1943 is characterised by the lowest slaughter rate ever. This was due to the severe depletion of stock consequent upon siege conditions.

B. Diseases and other causes of unsoundness detected in the course of Meat Inspection.

Of the slaughtered food animals referred to above 2,287 carcases were, in the course of Meat Inspection, found to be unfit for human consumption (Appendix II is a return of meat condemned in the Malta and Gozo Civil Abattoirs).

2. Emaciation is by far the commonest cause of unsoundness. This was largely due to the acute shortage of animal foodstuffs. Decomposition, another frequent reason for condemnation, was, during the war years, in great part due to air raid casualties being brought to the Abattoir for salvage some considerable time after death.

3. The main parasitic conditions encountered in the slaughterhouses were cysticercosis (Cysticercus bovis only) and distomatosis (Distomum nepaticum and D. lanceolatum in imported cattle and D. hepaticum in local sheep and goats). Infestation, however, was hardly ever heavy enough to justify total condemnation in either case. Indeed during the period under review only 3 carcases were condemned on the grounds of heavy C. bovis infestation while 27 carcases were put into cold storage for periods varying from 4 to 6 weeks owing to milder infestation. Similarly in the case of distomatosis in cattle while no carcases were condemned the condition was very common indeed, though not in an advanced stage, and a considerable number of livers was condemned. Distomatosis in local sheep and goats was commonest in those animals coming from the grazing grounds of the Chadwick Lake district. Total condemnation was likewise rare.

4. The threat of cysticercosis (C. cellulosae) to local pigs was effectively removed in 1938 when the importation of live pigs was prohibited.

5. Another somewhat common condition encountered in sheep and goats at meat inspection, though relatively few carcases were condemned, was toxaemia of pregnancy. In the majority of cases early slaughter obviated total condemnation.

6. Oestrus ovis infestation in sheep was fairly frequently met with but, owing to early slaughter, total condemnation was the exception rather than the rule. This parasite was also quite common in goats.

7. A number of cases of Piroplasmosis was encountered among imported cattle.

8. Generalised bovine Tuberculosis showed a relatively high incidence in the slaughterhouse, viz., 57, of which 24 were store cattle imported from Hungary, 3 were store cattle imported from Poland, 1 from Tunis, and the rest (29) were local dairy cattle. The disease was also encountered in a generalised form in 12 pigs. The highest incidence among imported cattle was in 1940 when no fewer than 21 cases were detected in the slaughterhouse. Among local cattle the incidence was highest in 1941 with 10 cases.

9. Foot-and-Mouth Disease first made its appearance on a large scale in the slaughterhouse in 1944 during a severe epizootic when 250 infected animals belonging to the different susceptible species were brought to the Abattoir for slaughter. In 1946 there was another outbreak of the disease and 311 animals were slaughtered for salvage.

10. Swine Erysipelas which had been appearing with fairly regular frequency decreased appreciably after preventive inoculation in the larger piggeries in 1942-1944 Since then there were only sporadic cases of the disease in the slaughterhouse.

11. Swine Fever, the incidence of which had been steadily increasing, assumed epizootic proportions in 1945 when 125 pigs slaughtered for salvage were condemned at meat inspection. In 1946 the number of pigs condemned owing to swine fever infection was 131. A considerable number of pigs in the incipient stages of the infection was also slaughtered during these two years. The carcases of these animals were sound and were, therefore, passed for food.

C. Post-mortem examinations.

The carcases of 1,372 animals were brought to the Civil Abattoir for autopsy. The results of these post-mortem examinations are at Appendix III.

D. Other activities in the Abattoir.

These include the treatment of veterinary war casualties, the Subsidised Meat Scheme, the Goat Slaughter Policy and the Vegetable Scheme which will all be dealt with later.

E. Financial Statement.

Appendix IV is a return of expenditure and revenue, per financial year, for the period under review.

2. IN THE FIELD.

A. Importation of livestock.

As already stated the Island has always been entirely dependent on imported cattle for its beef requirements. The exporting countries before the war were Hungary, Poland, Jugoslavia, Algeria, Tunisia, Bulgaria, Greece and Turkey and the total imports averaged 10,000 to 12,000 head per year. The importation of meat on the hoof was brought to an end by Italy's entry into the war and between December 1st, 1938, and June 7th, 1940, the date of arrival of the last cargo, 18,587 head of cattle were imported, i.e., an average of 885 head per month. Three cargoes were, on arrival, found to be infected with Foot-and-Mouth Disease and were, therefore, isolated in the Lazaretto Quarantine Station pending slaughter or complete recovery.

2. 1,003 sheep and 100 equines were also imported during the abovementioned period.

3. The importation of pigs, as already stated, was prohibited in 1938 (Government Notice No. 13/38). The reasons for this prohibition were :—

a) to encourage and protect the local pig industry which was then quite a flourishing one ; the cross breed between the Large White and the local pig gave very good results producing excellent porkers and bacon pigs ;
b) to prevent the threatened spread of cysticercus cellulosae infestation to local pigs from imported ones which, as a rule, were heavily infested with the parasite.

4. After cessation of hostilities the resumption of the importation of food animals was given serious consideration by Government but certain difficulties presented themselves. In the first place the countries with which Malta used to trade formerly were not in a position to export cattle owing to severe depletion of stock brought about by war conditions. Lack of adequate quarantine facilities in Malta and of accurate and reliable information regarding the state of animal health in prospective exporting countries rendered inadvisable the unrestricted importation of livestock on a pre-war scale. The risk of infectious and contagious diseases being introduced into the Island was too great to be overlooked.

5. The possibility of importing food animals from Tripolitania was thoroughly investigated on the spot towards the end of 1945 with special reference to the state of animal health in that country and the prospects of a continuous supply of meat on the hoof. Conditions there were highly satisfactory from a veterinary point of view and importation was eventually allowed.

6. The ban on the importation of pigs was suspended by Government Notice No. 11/46 and between January 1st, and September 30th, 1946, 900 pigs were imported from Tripoli. During the same period 3,242 head of store cattle, i.e., 16% of the pre-war rate, and 955 equines were also imported.

7. The pigs imported from Tripoli had originally a considerable amount of the Malta X Large White strain in them from stud boars imported from this Island before the war. During the war, however, when the introduction of fresh blood was impossible there was of necessity intensive in-breeding which, naturally, resulted in reversion to type and the consequent production of inferior quality pork.

8. The Tripoli cattle produced good quality beef and, apart from occasional cases of cysticercus bovis infestation, their general state of health was remarkably good.

9. The lifting of the ban on foreign pigs was motivated by the following considerations :—

a) the shortage of fresh pork due to depletion of local stock ;
b) the difficulty in re-stocking owing to shortage of animal foodstuffs ;
c) the high price of pork consequent upon a) and b).

10. A few cargoes of cattle were also imported from Smyrna in 1946. These consisted largely of aged beasts producing inferior quality beef. Small numbers of indifferent cattle were also imported from Tunisia.

11. All the imported animals were subjected to a preliminary clinical examination on board ship. This was followed by a second examination after disembarkation when, in the case of cattle and pigs, the animals were also graded for customs purposes and afterwards put in quarantine on the importers' premises.

B. Animal Diseases (Prevention, Control and Eradication).

1. The fight against animal diseases is greatly handicapped by the farmer's mentality and attitude towards disease which he looks upon as a fortuitous act completely beyond the control of human agency. This is especially the case where epizootics are concerned. The farmer resents the handling of his stock and is greatly averse from any sort of preventive treatment and, in particular, that involving the administration of injections to his animals, e.g., Tuberculin Testing, vaccination against Swine Erysipelas etc. The slightest malaise, the cause of which is not immediately apparent to him, is invariably ascribed to the injection and nothing will persuade him to the contrary.

FOOT-AND-MOUTH DISEASE.

1. Apart from the three infected batches of imported cattle already referred to there were only sporadic outbreaks of low virulence during the early part of the period under review. As far as can be ascertained (records were destroyed by enemy action) there was practically no mortality from infection.

2. In 1944 there was a serious epizootic of foot-nnd-mouth disease the source of which was traced to straw which had been imported from Sicily for Army horses and of which some had been surreptitiously removed from the landing craft in Msida creek to farms in the St. Vennera area where the first case was detected.

3. The infection, which was of a particularly virulent nature and, in the light of subsequent findings, most probably of a mixed type, spread with considerable rapidity and soon assumed epizootic proportions. Altogether there were 108 outbreaks involving 2,913 head of livestock between cattle, sheep, goats and pigs. Mortality was exceptionally high and there were no fewer than 577 deaths and slaughterings, i.e., 20.2% of the total number of animals involved and 0.65% of the whole susceptible animal population. In goats the virulence was such that in a considerable number of cases death supervened before the onset of symptoms. In the case of milking animals there was a very heavy drop in the milk yield, viz. over 50%. Lowered resistance from restricted rations and intensive milking during the war years contributed in no small measure to the heavy losses sustained.

4. Measures taken for the control of the epizootic were as hereunder :—

a) restriction of movement of animals and of animal products ;

b) strict quarantine and constant surveillance by veterinary personnel of infected premises ;

c) delivery, in Government vehicles, of fodder rations to infected premises ;

d) collection, in Government vehicles, of milk from infected premises for delivery to the Milk Marketing Undertaking for pasteurisation ;

e) slaughter of infected animals and in-contacts in a separate and isolated slaughter hall in the Abattoir ;

f) collection, in Government vehicles reserved solely for the purpose, of animals from infected premises for conveyance to the Abattoir for slaughter ;

g) suspension of livestock shows, fairs and markets ;

h) suspension of the Swine-Erysipelas vaccination campaign in order to avoid any possible risk of the further spread of the infection ;

i) free issue of supplies of disinfectant to livestock owners ;

j) thorough disinfection of infected premises, vehicles used for the conveyance of infected animals and other material from infected premises and of persons handling infected animals and material ;

k) employment of health guards on infected premises.

5. The slaughter policy which is adopted in Great Britain the U.S.A., and other countries and which is considered to be the most effective way of controlling the infection was not followed in Malta for reasons of a purely economic nature. The slaughter-compensation policy would have involved Government in a considerable expenditure which, at a conservative estimate, would have amounted to about £100,000. Moreover, the ensuing loss of milk and meat, two essential commodities then already in short supply, and the further depletion of stock were important considerations which could not, in the circumstances, be overlooked.

6. The epizootic lasted from June to October of the same year followed by sporadic recrudescence. The expenditure incurred in combating it amounted to just over £3,000 a considerable portion of which was in connection with the employment of health guards on infected premises. In the subsequent outbreak of this disease the services of health guards were almost entirely dispensed with for reasons which will be stated in due course.

7. In the spring of 1946 there was a second outbreak. The infection in this case first appeared in the North Western part of the Island, namely the Mellieha area, whence it spread to Gozo, probably carried by livestock smuggled into that Island in

contravention of the regulations restricting the movement of animals. The source of infection was difficult to trace but frozen meat and swill containing it were strongly suspected. The number of infected premises in this epizootic was 47 involving approximately 800 animals. The infection was of a mild nature with only one death. Slaughterings for salvage amounted to 311.

8. The same precautionary measures were taken as in the 1944 outbreak with one main difference, viz., that the employment of health guards in this case was on a much more limited scale than in the previous one. The main reasons for this departure from the former policy were :—

a) a not inconsiderable expenditure could be, and eventually was, avoided;

b) the infected premises, being relatively few in number, could more easily be kept under the constant personal surveillance of the higher responsible officers of the Veterinary Service; this was not physically possible in 1944;

c) in 1944 it was observed that contraventions of the quarantine regulations were committed in spite of the health guards employed though such contraventions were, naturally, considerably fewer than would have been the case if the services of health guards had been dispensed with altogether;

d) the employment of health guards in 1944 was considered essential in view of the very limited trained staff at the disposal of the Veterinary Service.

9. An additional precautionary measure was the enactment, in 1945, of the "Swill and wrapping cloths Regulations" (Government Notice No. 448/45). These prohibit the feeding of unboiled swill to pigs and the use on farms of meat wrappers which have not previously been effectively sterilised.

SWINE FEVER.

This disease, which had been appearing sporadically for some considerable time, assumed epizootic proportions in 1945-1946 causing heavy mortality just when attempts were being made to re-stock after the depletion brought about by the war. The control of this disease presented certain difficulties. In the first place failure on the farmers' part to report cases of illness among their pigs greatly hampered the tracing of the source of the infection and the extent of its spread. Secondly, the subterfuges to which owners of infected stock resorted in order to avoid what to them appear to be irksome and unnecessary restrictions greatly favoured the continued spread of the infection.

2. The value of Crystal Violet Swine Fever Vaccine as an immunising agent was explained in great detail to some of the leading, and supposedly more enlightened, pig-breeders who eventually expressed their willingness to have their animals vaccinated at their own expense. A limited stock of vaccine was, therefore, obtained by the Department at no small expense and trouble but the trifling cost of 2/- per dose proved a strong deterrent and only a very few pigs were inoculated.

SWINE ERYSIPELAS.

This disease had been endemic for some time and had been the cause of appreciable losses to the pig industry which, until the outbreak of hostilities, had been one of the Island's main Agricultural resources. In 1942 resort was had to compulsory inoculation by the simultaneous vaccine-serum method and this policy was followed well into 1944 when it was suspended owing to the appearance of Foot-and-Mouth Disease. This free preventive treatment was extended to all the larger piggeries comprising a total of 3,890 pigs (i.e., 30% of the pig population) and as a result there was an appreciable fall in the incidence of this infection. Indeed towards the end of the period under review cases of Swine Erysipelas in the slaughterhouses were sporadic.

TUBERCULOSIS.

Cases of generalised tuberculosis encountered in the course of meat inspection in cows from one of the larger dairy herds aroused strong suspicions of high incidence of this disease in the herd concerned and stressed the need for further investigation. In 1939 the Double Intradermal Tuberculin Test was, therefore, applied (for the first time in Malta) and this revealed an alarmingly high incidence, approximately 40%.

It was, therefore, decided to extend the survey to another large herd which was then also supplying raw cow's milk. 50% of the animals in this herd gave a positive reaction which, in the circumstances, was considered an appalling state of affairs. Suasive tactics induced both dairy farmers to slaughter reactors. The slaughter policy, being on a voluntary basis, was of necessity a lengthy process and was not, therefore, the real solution to the problem as tuberculosis appeared in other dairy herds besides reappearing in the original infected herds.

2. In the light of the above findings it was considered advisable to make Tuberculin Testing of dairy herds one of the routine activities of the Veterinary Service with a view to the formulation of a radical policy for the total eradication of Tuberculosis. This activity was carried out only on a limited scale during the war years but in 1945 all the large dairy herds in Malta, comprising a total of about 510 head, were tested. The percentage incidence on the whole was low but it was relatively high in certain individual herds. Thus the two largest herds tested had 12% reactors each.

3. In 1945 a comprehensive scheme for the eradication of bovine Tuberculosis was submitted to Government and was eventually approved. Unforeseen circumstances, however, prevented its being put into effect.

4. Tuberculin testing was not carried out in 1944 and 1946 owing to the Foot-and-Mouth epizootics to which reference has already been made.

POULTRY DISEASES.

Fowl pox, fowl typhoid and fowl cholera have been endemic for some considerable time and have been responsible for appreciable losses to poultry farming. Preventive inoculation, however, has greatly reduced mortality from these diseases. Towards the end of the war Newcastle Disease was first suspected and subsequently confimed in this Island. It was the cause of severe outbreaks with heavy mortality and a marked drop in egg production.

WAR TIME ACTIVITIES.

Activities of the Veterinary Service during the war were largely dictated by the unusual conditions obtaining at the time. Thus while Abattoir work decreased with the depletion of stock field work increased with the need for husbanding surviving stock and increasing or supplementing it.

2. Rabbit farming received a very appreciable impetus and production soon showed a marked rise thus contributing to the Island's meagre larder. A very serious obstacle to rabbit breeding, viz., Vent Disease, was overcome in 1942 when experimental treatment was first carried out with mercurials. Results, though quite satisfactory in many cases, were not wholly consistent and did not, therefore, justify the extensive use of mercury preparations. Bismuth metal was also given a trial but results were inconclusive in that, owing to the long treatment required, it was not known whether a cure was effected because of or in spite of treatment. Salvarsan and allied arsenical preparations were next tried and quite spectacular results were obtained. With very rare exceptions a cure was effected in a matter of four to five days whereas formerly it used to take weeks and even months, which considerably shortened the breeding life of the rabbit.

3. Foot mange in rabbits, although not directly interfering with productivity, was another serious menace to rabbit breeding owing to the consequent marked unthriftiness. Sulphur preparations were tried with good results but treatment was too long, viz., 4 to 6 weeks or more. These were, therefore, discarded in favour of Benzyl benzoate which effected a cure in a matter of days.

4. With a view to conserving existing stock, and possibly increasing it, legislation was enacted prohibiting :—

a) the slaughter of cows and heifers and of calves under nine months, the object of the latter prohibition being to maintain production of natural manure ;

b) the slaughter of breeding sows.

The responsibility of deciding whether or not slaughter of the animals referred to in the abovementioned regulations was justified devolved upon the Veterinary Service.

5. The shortage of fresh meat which naturally caused a considerable increase in the price of this essential commodity made it incumbent upon Government to evolve some scheme for the equitable distribution, at a controlled price, of the available supplies. The Subsidised Meat Scheme was launched on June 26th, 1942, and continued in operation until September 30th, 1944. During this period slaughterings were as hereunder :—

Cattle	1,440
Sheep	6,325
Goats	18,832
Pigs	14,494
Equines	680
Lambs	2,397
Kids	403

6. The scheme, in brief outline, was as follows. The Department purchased, on a dead weight basis, all the livestock brought to the Abattoir for slaughter. The animals were slaughtered and the carcases dressed by Government employees. The Veterinary Officers then inspected and graded the meat which was then weighed for the assessment of payment due to vendors and for the allocation of quotas to retailers. Allocations were, as near as possible, in direct ratio to the pre-war sales of the individual retailers, due regard being had to the wartime fluctuations of the population in the different districts. The weighing out of the meat took place in the afternoon under the personal supervision of the Veterinary Officers assisted by other employees of the Department.

7. The goat slaughter policy came into force on August 11th, 1942, in Malta and on October 22nd of the same year in Gozo. The unpleasant duty of requisitioning goats also devolved upon Veterinary personnel and, as was to be expected, very stiff resistance was encountered. This was overcome to some extent when owners were allowed to retain three goats each and Government offered a bonus of £3 on every third goat slaughtered.

8. An unusual activity in which the Veterinary Service was called upon to take part was the Vegetable Scheme which was on the same general principles as the Meat Scheme with the difference that whereas in the latter there was only collecting and distributing centre, viz., the Abattoir, in the former there were several centres distributed over the Island. The Abattoir was one of these centres and a Veterinary Officer and several other employees were detailed to supervise the weighing-in and weighing-out of vegetables in this and other centres.

9. At the outbreak of hostilities the Civil Abattoir became the emergency hospital for veterinary air raid casualties of which several hundred were given free treatment by the Veterinary Officers. 700 fatal casualties were brought to the slaughterhouse for salvage. Many of these, however, were unfit for human consumption and were, therefore, disposed of by incineration.

10. In April, 1942, the Abattoir received the unwelcome attention of enemy aircraft carrying 2,000 lb bombs. The main office buildings, the cattle slaughter hall, the tripecleaning shed and the lairages were completely destroyed while many of the remaining structures were badly damaged. The slaughterhouse as such was thrown completely out of action but temporary repairs and makeshift arrangements soon made it possible to resume slaughterings. The Subsidised Meat Scheme threw a heavy strain on the limited resources but goodwill and co-operation on the part of the staff surmounted every obstacle and both this and the Vegetable Scheme ran smoothly and efficiently ensuring that measure of control necessary for deriving the maximum benefit from essential commodities which were then in very short supply.

11. In conclusion I wish to express my appreciation of the devotion to duty evinced by Veterinary personnel during enemy air attacks which, owing to the situation of the Abattoir in a vital target area, were of necessity heavy and protracted.

T. E. Gatt Rutter,
Principal Government Veterinary Surgeon.

APPENDIX I.

Return of Livestock slaughtered during the period October 1st, 1938 to September 30th, 1946.

MALTA

Year	Cattle	Equines	Pigs	Sheep	Goats	Lambs	Kids
1938–39	13,170	658	23,453	4,793	6,150	3,612	558
1939–40	7,246	1,093	28,536	4,966	9,169	3,797	35
1940–41	1,578	945	17,129	5,270	13,950	3,326	361
1941–42	1,360	569	18,721	3,883	21,327	2,803	272
1942–43	345	395	990	2,236	5,328	362	189
1943–44	497	145	6,037	3,147	2,150	1,973	149
1944–45	893	122	11,515	5,151	2,443	1,558	45
1945–46	3,977	192	16,901	7,161	3,814	1,949	82
Total	29,066	4,119	123,282	30,607	64,331	19,380	2,008

GOZO

Year	Cattle	Equines	Pigs	Sheep	Goats	Lambs	Kids
1938–39	2,003	—	4,010	362	106	2,760	479
1939–40	1,026	1	4,483	788	401	2,826	239
1940–41	485	3	3,669	2,055	981	3,298	324
1941–42	384	2	3,114	2,737	1,049	2,915	424
1942–43	196	27	114	704	2,367	4,973	434
1943–44	40	3	240	891	248	4,094	218
1944–45	243	7	1,656	1,651	367	5,597	567
1945–46	535	8	3,743	1,994	628	6,598	537
Total	4,912	51	21,029	11,182	6,147	33,061	3,222

APPENDIX II.

Diseases and other causes of unsoundness of meat detected in the Malta and Gozo Slaughterhouses during the period October 1st 1938, to September 30th, 1946.

Cause of unsoundness	Cattle	Equines	Sheep	Goats	Pigs	Lambs	Kids	Total
Anthrax	6	—	—	—	—	—	—	6
Bruising	3	20	20	36	2	2	—	83
Cysticercosis	3	—	—	—	—	—	—	3
Decomposition	11	18	182	278	78	5	4	571
Distomatosis	—	—	5	1	—	—	—	6
Emaciation	10	19	163	339	37	16	13	597
Foot-and-Mouth Disease	32	—	1	17	10	—	—	60
Hydraemia	1	5	12	14	11	1	—	44
Imperfect Bleeding	3	30	6	14	19	—	—	72
Immaturity	4	—	—	—	—	5	—	19
Jaundice	3	—	7	26	52	—	10	88
Mastitis	2	—	42	113	10	—	—	167
Melanosis	1	5	—	—	—	—	—	6
Metritis	8	—	52	143	3	—	—	206
Navel Ill	9	—	—	—	—	—	—	9
Nephritis	1	—	26	8	1	—	—	36
Oedema	1	5	8	8	6	—	—	28
Oestrus Ovis	—	—	5	—	—	—	—	5
Pericarditis	2	—	1	—	—	—	—	3
Peritonitis	6	6	6	10	19	—	—	47
Pneumonia	7	2	11	12	8	—	—	40
Rickets	—	—	—	2	3	—	—	5
Septicaemia	4	3	12	19	33	—	7	78
Swine Erysipelas	—	—	—	—	318	—	—	318
Swine Fever	—	—	—	—	85	—	—	85
Tetanus	—	6	—	—	—	—	—	6
Toxaemia of Pregnancy	—	—	1	4	—	—	—	5
Tuberculosis	62	—	—	—	12	—	—	74
Uraemia	4	3	—	8	3	1	1	20
Total	183	117	560	1,052	710	30	35	2,687

APPENDIX III.

Post-Mortem Examinations during the period October 1st, 1938, to September 30th, 1946.

Cause of death	Cattle	Pigs	Sheep	Goats	Lambs	Kids	Equines	Total No. of Carcases
Anaemia	—	22	—	—	—	—	—	22
Anthrax	2	—	—	—	—	—	—	2
Biliary Fever	—	—	—	—	—	—	15	15
Colic	—	—	—	—	—	—	108	108
Distomatosis	—	—	6	26	—	—	—	32
Dysentery	1	—	2	6	4	14	—	27
Dystocia	—	1	13	64	—	—	—	78
Epizootic Lymphangitis ...	—	—	—	—	—	—	1	1
Foot-and-Mouth Disease ...	—	7	1	15	—	—	—	23
Gastro-Enteritis	—	9	10	15	—	—	—	34
Haemoglobinurea	—	—	—	—	—	—	1	1
Hepatitis	—	1	1	—	—	—	12	14
Hernia (Strangulated Inguinal)	—	1	—	—	—	—	3	4
Impaction of Rumen ...	—	—	1	1	—	—	—	2
Imperforate Anus	—	—	—	—	—	2	—	2
Intestinal Obstruction ...	5	1	2	5	—	—	10	23
Intussusception	—	—	—	—	—	—	2	2
Jaundice	—	4	1	—	—	—	—	5
Malnutrition	1	22	16	46	7	17	8	117
Mastitis	—	—	6	22	—	—	—	28
Metritis	—	—	10	41	—	—	—	51
Navel Ill	7	—	—	—	—	—	—	7
Nephritis	1	7	1	5	—	—	6	20
Oestrus Ovis	—	—	24	16	—	—	—	40
Pericarditis	3	5	1	—	—	—	1	10
Peritonitis	5	—	—	—	—	—	—	5
Piroplasmosis	1	7	1	6	1	1	11	28
Pneumonia	4	30	10	25	4	10	50	133
Pyaemia	—	—	—	—	—	—	1	1
Rickets	3	—	—	—	—	—	—	3
Rupture of Colon ...	—	—	—	—	—	—	1	1
Rupture of Diaphragm ...	—	—	—	—	—	—	2	2
Rupture of Stomach ...	—	—	—	—	—	—	23	23
Rupture of Uterus ...	—	—	—	7	—	—	—	7
Septicaemia	4	7	—	1	—	—	3	15
Sterility	—	1	4	—	—	—	82	87
Stillbirth	3	1	—	—	1	11	—	16
Swine Erysipelas	—	58	—	—	—	—	—	58
Swine Fever	—	143	—	—	—	—	—	143
Tetanus	—	—	1	1	—	1	12	15
Toxaemia of Pregnancy ...	—	—	3	16	—	—	—	19
Trauma (Including Traffic Accidents)	1	17	10	75	—	2	27	132
Thrombosis (Iliac) ...	—	—	—	—	—	—	1	1
Tuberculosis (Generalised) ...	—	1	1	—	—	—	—	2
Tympany of the rumen ...	—	—	—	—	2	—	—	2
Volvulus	—	—	—	—	—	—	5	5
Zinc phosphide poisoning ...	—	—	1	4	—	1	—	6
Total ...	41	345	126	397	19	59	385	1,372

APPENDIX IV.

Financial statement for the period October 1st, 1938 to September 30th, 1946.

Year	EXPENDITURE			REVENUE		
	Personal Emoluments	Other Charges	Total	Abattoir fees	Weighing fees	Total
	£	£	£	£ s. d.	£ s. d.	£ s. d.
1938–39	3,955	1,709	5,664	8,281 14 9	1,708 4 4	9,989 19 1
1939–40	4,051	1,265	5,316	7,539 16 7	1,409 2 7	8,948 19 2
1940–41	4,143	1,202	5,345	4,848 0 6	846 4 1	5,694 4 7
1941–42	3,962	1,203	5,165	5,161 13 6	861 6 8	6,023 0 2
1942–43	RECORDS NOT AVAILABLE		—	1,094 15 5	208 2 6	1,302 17 11
1943–44	2,279	645	2,924	1,550 16 10	178 5 8	1,729 2 6
1944–45	3,524	3,740	7,264	2,793 17 10	410 17 1	3,204 14 11
1945–46	3,676	2,185	5,861	4,914 14 8	844 10 11	5,759 5 7
Total ...	25,590	11,949	37,539	36,185 10 1	6,466 13 10	42,652 3 11

N.B.—Abattoir fees include:—

a) Slaughtering fees;
b) Horse Ambulance fees;
c) Lairage fees;
d) Other fees.

APPENDIX 8.

Report by the Principal Government Veterinary Surgeon for the year October 1st, 1946, — September 30th, 1947.

I. ACTIVITIES IN THE ABATTOIR.

A. Slaughterings.

During the year under review 56207 food animals were slaughtered in the Malta and Gozo Civil Abattoirs as detailed hereunder :—

	Cattle	Sheep and Goats	Pigs	Lambs and Kids	Equines
Malta	7,886	21,434	10 440	2,034	748
Gozo	604	3.431	2.634	6,979	17
Total ...	8 490	24,865	13,074	9,013	765

2. Appendix I is a return of monthly slaughterings. The fluctuationos in the cattle slaughter rate follow closely the course of the Rinderpest (Cattle Plague) epizootic which made its first appearance in Malta in December, 1946. The slaughter rate rose steadily with the increase in the incidence of the infection and with the consequent necessity for salvaging infected animals. Thus in June slaughterings amounted to 1,235 of which 1,004 were animals involved in a sudden flare-up of Rinderpest among imported store cattle. The slaughter rate then gradually decreased as the infection subsided and in August it was back at its pre-epizootic level.

3. Pig slaughterings were 30% lower than the previous year, due largely to the depletion of breeding stock and of fatteners brought about by a severe outbreak of swine fever in the spring of 1946.

4. The goat slaughter rate was appreciably higher than in previous years not excluding the pre-war years. The reason for this was a purely economic one, viz., the relatively low price of milk vis-a-vis the high cost of production.

5. In the case of equines the slaughter rate was again high due to a good demand for horseflesh which is much cheaper than, and a popular substitute for fresh beef.

B. Diseases and other causes of unsoundness detected in the course of Meat Inspection.

Appendix II is a return of meat condemned in the course of Meat Inspection.

2. Decomposition is the chief cause of unsoundness of meat. This is explained by the fact that, except in cases where the owner suspects infectious disease, the carcases of dead animals are almost invariably brought to the Abattoir for salvage and very often some considerable time after death when putrefaction has already set in.

3. Rinderpest, during the epizootic, was the cause of unsoundness in 66% of the bovine carcases condemned during the year.

C. Post-mortem examinations.

194 carcases were brought to the Civil Abattoir for post-mortem examination. This figure does not represent all the deaths that occurred throughout the Island during the year but only those that were reported.

Surreptitious disposal of carcases is very frequently resorted to by livestock owners in order to escape the unwelcome attention of the Veterinary Service and the restrictions which it might be necessary to impose in case of infectious and contagious diseases.

2. Colic in equines was a frequent cause of death and in the majority of cases it was due to the injudicious feeding of beans, chick peas and carob beans.

3. Six cases of Tetanus in equines were also reported.

4. In sheep and goats dystocia accounted for approximately 36% of the deaths reported.

5. Appendix III is a return of post-mortem findings.

6. Appendix IV is a financial statement for the year under review.

II. LIVESTOCK IMPORTS.

During the year under review 11,250 head of livestock were imported as detailed hereunder :—

Country of origin	Number of cargoes	Cattle	Equines	Pigs	Sheep
Algeria ...	1	—	6	—	—
Cyrenaica ...	12	4,132	12	—	814
Egypt	3	—	—	708	—
Sudan	2	718	—	—	—
Tripolitania ...	22	1,563	480	1,346	—
Tunisia ...	13	—	634	—	—
Turkey ...	5	779	—	—	—
Total ...	58	7,192	1 132	2.054	814

2. Cattle imports although more than double those of the previous year, fell short of the pre-war rate by some 40%. As in the previous year the cattle from Cyrenaica and Tripolitania, the two main exporting countries, were, on the whole, young animals producing good quality beef. Their general state of health was remarkably good and, in the slaughterhouse, only a few cases of cysticercosis were encountered. Like local cattle they proved to be extremely susceptible to Rinderpest which wrought havoc among them.

3. The Sudan with plentiful cattle at a low price appeared to be an ideal source of supply which, however, had not been tapped previously owing to the known existence there of infectious and contagious diseases, notably Cattle Plague, Contagious Bovine Pleuro-Pneumonia and Foot-and-Mouth Disease. The importation of cattle from that country, eventually was allowed on the strength of certain assurances given by the Sudan Veterinary Service but was stopped when, on arrival here, the animals were found to be infected with Rinderpest.

III. ACTIVITIES IN THE FIELD.

The field activities of the Veterinary Service during the year under review were directed mainly towards the eradication of the Rinderpest (Cattle Plague) epizootic which was introduced into the Island by cattle imported from the Sudan in December, 1946.

2. The importation of cattle from the Sudan was allowed solely on the strength of what at the time appeared acceptable assurances and guarantees given by the

Director of the Sudan Veterinary Service in a letter dated 22nd September, 1946, (copy attached as Appendix V). There was, moreover, the added attraction of the possibility of meeting local requirements of cattle at a very low price, thus solving the meat problem which at the time was acute.

3. An odd case of Rinderpest in a consignment of effectively immunised cattle would not have made any material difference. Slaughter of the infected animal, incineration of the carcase, thorough disinfection and segregation of the in-contacts would have been sufficient to prevent the spread of the infection to other animals in the Island. It appears, however, that natural infection existed among the animals prior to shipment. This was subsequently confirmed by information to the effect that, a number of cattle in the same quarantine park was not allowed to proceed to Malta owing to Rinderpest infection. Moreover, it transpired from a report by the Director of the Sudan Veterinary Service (extract attached as Appendix VI) that, at least, 28 of the cattle in the Khartoum Quarantine park had been fraudulently branded without being vaccinated.

4. Two batches were shipped from the Sudan, one of 474 head, arriving on December 11th, 1946, and the second consisting of 244 head which arrived on January 1st, 1947. Both these cargoes were, on arrival, found to be heavily infected, the disease being diagnosed post-mortem in the slaughterhouse and clinically on the importer's premises where, owing to lack of official quarantine facilities, the animals were housed. Apart from cases in various stages of recovery the incidence of infection in the two cargoes was 10%. This was considerably higher than ever anticipated especially in view of the fact that the cattle were not protected against the disease and eventually contracted the infection.

5. Conditions were then particularly favourable for the spread of the infection to other bovines in the Island. First and foremost there was the insurmountable difficulty of strict and efficient isolation in a well-equipped official quarantine Station, the Lazzaretto Station being then in the hands of the Admiralty. As a result the animals had, of necessity, to be housed and kept in quarantine on the importers' premises. Health guards were employed for the purpose of ensuring against the movement of unauthorised persons and of animals on to and out of the infected premises. This notwithstanding surreptitious entries were by no means uncommon and the infection was carried to other farms by livestock dealers.

6. As the Lazzaretto slaughterhouse was not available there was no option but to slaughter the infected cattle in the Civil Abattoir where normally only healthy animals are slaughtered. Thus Butchers and livestock owners frequenting the Abattoir and handling infected meat, offal and other material acted as mechanical vectors carrying the infection to their own farms and to other farms visited in the course of their trade.

7. The infection soon appeared in local cattle and the first case was diagnosed clinically on the 6th February in a dairy cow and confirmed post-mortem on the following day. A second outbreak was confirmed on a dairy farm later in the month. The disease then began to spread insidiously and by August 23rd, the date of the last outbreak, no fewer than 48 outbreaks were confirmed, apart from the two cargoes of Sudanese cattle to which reference has already been made. The number of animals involved was 2,497 of which 316 were local cattle and 2,181 were store cattle imported from Tripolitania and Cyrenaica for fattening locally. Of the local cattle 11 died of the infection, 181 were slaughtered for salvage and the remaining 124 contracted the disease and recovered. Both the local cattle and those imported from Tripolitania and Cyrenaica proved to be highly susceptible to Rinderpest and in recovered animals there was marked and persistent unthriftiness. (Appendix VII is a statement showing the incidence of Rinderpest).

8. The epizootic reached its highest peak in April when no fewer than 19 outbreaks occurred. This put a heavy strain on the very limited staff who besides their normal duties were called upon to assist the Veterinary Officers in the extra duties involved in combating the spread of the infection. June with nine outbreaks was the most disastrous month; 1,918 head were involved of which 1,004 were slaughtered for salvage.

9. Compulsory slaughter and destruction of infected animals and of in-contacts was not resorted to in view of the considerable expenditure which would have been incurred in the payment of compensation. Moreover, the precarious meat situation was a major consideration in deciding against such a policy.

10. Measures taken for the control and eradication of the epizootic were as hereunder.

a) **Quarantine.** The enforcement of strict quarantine on infected premises presented a most difficult problem especially in the case of those premises housing imported store cattle in large numbers. The importers, whole sole interest was the speedy disposal of their animals had no qualms about contravening quarantine regulations by allowing cattle dealers and butchers on their premises. Health guards proved unequal to the task and yet their services could not be dispensed with altogether without prejudice to the campaign. The only alternative was frequent surprise visits each day by senior responsible officers who were few in number and badly overworked.

b) **Disinfection.** Persons handling infected animals or infected material, premises housing or known to have housed infected animals, and vehicles used for the conveyance of infected animals and infected material were all thoroughly disinfected at Government expense. Mats continually soaked in disinfectant were put down at all the Abattoir gates and at the gates of infected premises. The hides of animals from infected premises were treated with 1 : 1,000 perchloride of mercury solution or with 5% formalin solution by immersion for 24 hours.

c) **Restriction of movement of animals.** The movement of animals in Malta was restricted to the fullest extent possible while traffic between Malta and Gozo was brought to a complete standstill.

d) **Slaughter of infected animals and of in-contacts.** Suasive tactics and the vexatious fear of what stock-owners look upon as restrictions induced some of the smaller farmers to slaughter their infected animals and in quite a number of cases also the in-contacts. The probability of savlage in early cases was a further incentive. For reasons already stated resort was not had to the compulsory slaughter policy.

e) **Vaccination.** The original policy recommended by Dr. R. Daubney, C.M.G., M.R.C.V.S., an authority on Rinderpest control whom I contacted in Cairo in February, was immunisation of all the cattle in the Island. Vaccination was, therefore, made compulsory under the Cattle Plague Regulations, 1947, by Government Notice No. 169, dated 18th April, 1947. As was to be expected stiff opposition was encountered at first. Cattle owners only consented to have their animals vaccinated after it had been fully explained to them that Government would pay compensation in the event of their cattle dying as a direct result of inoculation. 4,203 head were inoculated by various methods.

As a control measure vaccination was somewhat disappoining. Goat virus, alone or in combination with hyperimmune serum, was first used. Effective immunity was conferred in some cases while in a considerable number of others the animals were left unprotected amidst infection and, being highly susceptible, contracted the disease. This was due either to non-viability of the virus or, in the case of cattle inoculated with goat virus and serum simultaneously, to reactions being "blocked-out" by the serum even in the small doses that were administered, viz., 15—20 cc. A limited stock of "egg-cultured" vaccine was next obtained from U.N.R.R.A. and given a fairly extensive trial and the conclusion was arrived at that the virus, having been in cold storage for almost two years, had lost its viability. "Out-passage" virus was also used but was not given extensive enough trials. In August I prepared a brew of vaccine on Dr. Daubney's formula but the necessity for its use did not arise as by the end of the month Rinderpest had been completely eradicated from the Island.

11. The flare-up already referred to in paragraph 8 made it clear that the above-mentioned control measures were not having the desired effect and that, in view of the repercussions which the continued existence of Rinderpest in Malta might have in Europe through spread of the infection to the Continent the policy was once more reviewed with the object of speeding up the extirpation of the disease.

12. As has already been stated the Civil Abattoir and the premises housing imported cattle were the main and most dangerous foci from which the infection was spreading. The Abattoir focus was easily eliminated by walling off a portion of the cattle-slaughter hall for the slaughter of infected animals and only allowing Government employees into that section.

13. The importers' premises were more difficult as long as there were cattle for sale. Moreover the continued influx of imported cattle constituted the fuel which was keeping the conflagration alive and there was no option but to advocate the drastic measure of prohibiting further imports pending complete eradication of Rinderpest. This recommendation was approved by Government and given effect by Government Notice dated July 29th, 1947.

14. A marked improvement in the general situation soon followed and while in July there were seven outbreaks there were only four minor outbreaks in August and none in Septembeer.

15. Practically all the carcases and offals of the animals slaughtered for salvage during the period April-July had been put into cold storage. These constituted a potential source of recrudescence owing to the fact that the virus in the meat, offals (especially the spleen) and bone marrow is preserved in cold stores. When, therefore, sufficient time had elapsed since the last confirmed outbreak to justify the assumption that Rinderpest had been effectively eradicated it was considered expedient to remove this danger. The early disposal of these carcases and offals was, therefore, recommended. This recommendation was approved and the carcases were dumped into the sea, the offals were incinrated and the owners were paid adequate compensation.

16. As stated in my previous report the control of epizootics in Malta is an extremely arduous and strenuous task. On the one hand there is the farmer who does not believe in preventive treatment and, therefore, strongly resents having his animals inoculated. The "post hoc ergo propter hoc" mentality of the local farmer is a serious obstacle to prevention and control of disease and the extent of which it is instilled can only be gauged from the fact that deaths occurring as long as twelve months after inoculation were ascribed to the vaccine and claims were actually made for compensation. The cattle dealer on the other hand has only his business interests at heart and deliberately ignores the dire consequences to the community of a serious epizootic.

17. From the foregoing it will be appreciated that the question of effective prevention and control of infectious and contagious diseases from outside sources hinges solely on the provision of adequate official quarantine facilities. It is sincerely hoped that these will soon be available.

T. E. Gatt Rutter,

Principal Government Veterinary Surgeon.

APPENDIX I.

Slaughterings during the year October 1st, 1946 to September 30th, 1947.

MALTA.

Month	Cattle	Equines	Pigs	Sheep	Lambs	Goats	Kids
1946							
October ...	539	55	767	844	334	580	4
November ...	646	84	1,285	699	502	732	3
December ...	532	60	1,144	542	301	818	5
1947							
January ...	463	82	933	543	155	1,121	8
February ...	363	58	693	420	93	959	8
March ...	456	65	745	788	100	1,341	22
April ...	630	58	839	1,062	59	1,044	31
May ...	747	56	953	697	82	1,249	29
June ...	1,235	43	910	494	57	1,188	13
July ...	968	56	798	513	31	1,838	8
August ...	691	65	736	471	74	1,177	13
September ...	616	66	637	446	101	1,768	1
Total ...	7,886	748	10,440	7,519	1,889	13,815	145

GOZO.

Month	Cattle	Equines	Pigs	Sheep	Lambs	Goats	Kids
1946							
October ...	46	—	316	252	1,830	77	21
November ...	57	2	353	176	1,093	62	25
December ...	47	1	341	160	471	88	29
1947							
January ...	51	1	288	175	584	113	85
February ...	38	5	183	159	499	167	59
March ...	39	2	174	252	672	131	133
April ...	43	—	141	213	208	98	195
May ...	52	3	194	142	40	107	70
June ...	45	—	165	135	9	103	53
July ...	49	3	119	111	3	142	53
August ...	64	—	150	140	16	133	33
September ...	73	—	210	176	773	127	25
Total ...	604	17	2,634	2,091	6,198	1 348	781

APPENDIX II.

Diseases and other causes of Unsoundness of Meat.

Disease of Unsoundness	Cattle	Equines	Sheep	Goats	Pigs	Lambs	Total
Bruising	1	—	2	1	1	—	5
Cysticercosis	2	—	—	—	—	—	2
Decomposition ...	4	1	14	34	11	—	64
Emaciation	1	1	6	11	1	—	20
Fevered Flesh ...	3	1	—	—	—	—	4
Gas Gangrene ...	—	—	—	—	1	—	1
Immaturity	—	—	—	—	—	1	1
Imperfect Bleeding ...	2	1	—	1	—	—	4
Jaundice	1	—	3	2	1	—	7
Mastitis	—	—	1	4	—	—	5
Metritis	—	—	7	13	1	—	21
Oedema	1	2	3	3	2	—	11
Oestrus Ovis ...	—	—	1	—	—	—	1
Peritonitis	—	4	2	1	1	—	8
Pneumonia	1	1	—	—	—	—	2
Rinderpest	44	—	—	—	—	—	44
Sepsis (Extensive) ...	1	—	—	—	—	—	1
Swine Erysipelas ...	—	—	—	—	13	—	13
Swine Fever	—	—	—	—	19	—	19
Tetanus	1	—	—	—	—	—	1
Tuberculosis (Generalised)	5	—	—	—	1	—	6
Uraemia	1	—	6	3	1	—	11
Total ...	68	11	45	73	53	1	251

APPENDIX III.

Post Mortem Examinations during the year October 1st, 1946 to September 30th, 1947.

Cause of Death	Cattle	Equines	Swine	Sheep	Lambs	Goats	Kids	Total No.
Colic	—	24	—	—	—	—	—	24
Decomposition	—	—	—	—	—	1	—	1
Dystocia	—	—	—	4	—	15	—	19
Fatty Degeneration of the liver	—	2	—	—	—	—	—	2
Gastro-Enteritis	2	2	4	—	—	—	—	8
Immaturity	—	—	—	—	1	—	—	1
Impaction of the Rumen ...	—	—	—	—	—	4	—	4
Malnutrition	—	—	—	—	—	1	—	1
Mastitis	—	—	—	—	—	1	—	1
Metritis	—	—	—	1	—	7	—	8
Oedema	—	—	—	1	—	2	—	3
Pericarditis	—	—	—	—	—	1	—	1
Peritonitis	—	9	—	1	—	1	—	11
Pneumonia	—	10	—	5	—	2	—	17
Purpura haemorrhagica	—	1	—	—	—	—	—	1
Pyaemia	1	—	—	—	—	—	—	1
Rinderpest	39	—	—	—	—	—	—	39
Rupture of Colon	—	1	—	—	—	—	—	1
Rupture of the spleen	—	1	—	—	—	—	—	1
Senility	—	11	—	—	—	—	—	11
Swine Fever	—	—	5	—	—	—	—	5
Tetanus	—	6	—	—	—	—	—	6
Toxaemia of pregnancy	—	—	—	—	—	3	—	3
Trauma	—	22	1	1	—	1	—	25
Total ...	42	89	10	13	1	39	—	194

APPENDIX IV.

Financial Statement:— 1st April 1946 — 31st March 1947.

Revenue V — A. 24		Expenditure Head 3							
Abattoir Fees. Malta & Gozo Abattoirs.	£		£	s.	d	£	s.	d
	6,546	A Personal Emoluments	3,782	6	3	—	—	—
		B — Other Charges	—	—	—	—	—	—
		32 Maintenance of Slaughter Houses	—	—	—	338	—	—
N. B. Abattoir Fees, include:—		33. Supply of Ammunition & Humane Killers ...	—	—	—	128	—	—
		34. Coal and Other Fuel	—	—	—	937	—	—
		35. Prevention of Animal Diseases	—	—	—	1,782	—	—
Slaughtering Fees, Horse Ambulance fees & lairage fees.		36. Removal of Offal	—	—	—	33	—	—
		37. Water supply, Lighting & Electric Current ...	—	—	—	75	—	—
		38. Maintenance & Transport of Horse Ambulance	—	—	—	23	—	—
		39. Employments of Substitutes & Extra Labour...	—	—	—	107	—	—
		40. Training of A.G.V.S. in U K	—	—	—	262	—	—
		41. Replacement of Meat Stamping Apparatus ...	—	—	—	50	—	—
		42. Purchase of a Typewriter	—	—	—	23	—	—
	6,546		3,782	6	3	3,758	—	—
		Grand Total ...	...			£7,540	6s.	3d.

APPENDIX V.

SUDAN GOVERNMENT,
VETERINARY SERVICE,
Khartoum, 22nd September, 1946.

Director, Veterinary Service,
Malta Government — Valletta,
Malta.

Sir,

I have the honour to inform you that, in the near future, the Sudan Government intends granting specific licences to cattle traders wishing to export Male Cattle and Sheep on the hoof for slaughter, from the Sudan, to any country wishing to import.

2. I shall therefore be grateful if you will inform me of your country's veterinary import regulations in order that I may arrange with prospective exporters to fulfil the necessary conditions to permit entry into your country.

3. The following are the present regulations regarding immunisation and quarantine of animals destined for export. I shall be glad to learn whether certificates to this effect would satisfy your import regulations.

4. These regulations are as follows :—

a). **Cattle.** Prior to export cattle will receive, not more than thirty weeks and not less than four weeks, immunisation by vaccines against Cattle Plague, Contagious Bovine Pleuro-Pneumonia and Anthrax; simultaneously all cattle will be injected with a live mixed virus of Foot and Mouth Disease (and only cases which have recovered or have not shown any symptoms will be allowed to proceed for export).

Cattle will spend not less than ten days immediately prior to export in one or other of the Sudan Veterinary Service's Quarantine Parks under that Service's supervision. Part of that time may be spent travelling by train from one Quarantine Park to another.

b) **Sheep.** Prior to export sheep will spend not less than six hours in one of the Veterinary Quarantine Parks under supervision of the Sudan Veterinary Service.

5. Throughout the period of inoculation, quarantining and export, the cattle remain the property of the exporting merchants and are their responsibility for feeding, watering and arranging transportation.

I have the honour to be,
Sir,
Your obedient servant,

P. Z. Mackenzie,
A/Director,
Sudan Veterinary Service.

APPENDIX VI.

Extract from the monthly Bulletin of the Sudan Veterinary Service.

. . . . . .

22. On 3rd February, 1947, twenty-eight head of export cattle were detained in Khartoum North Quarantine on suspicion of having false brands on them. They all belonged to one merchant — Khalil Geiballah of Nahud — and all had a very fresh "7" brand on the horn. The "7" brand on the horn is the Service mark indicating the First Registration which ended on 31st August, 1946. The freshness of the brands themselves consequently aroused immediate suspicion which seemed confirmed when it was found that not one of these possessed the "T" brand denoting the re-vaccination started following the Malta debacle. Furthermore experimental inoculation on these animals with foot-and-mouth disease virus produced typical lesions in 27 out of the 28 beasts. The matter was put into the hands of the police who are still making investigations.

APPENDIX VII.

INCIDENCE OF CATTLE PLAGUE IN MALTA

11th December, 1946 — 23rd August, 1947.

SUDANESE CATTLE

Month	Outbreaks	No. of animals involved		Slaughterings		Recoveries	Deaths	
		Imported	Local	Imported	Local	Local only	Imported	Local
1946								
December	1	474	—	—	—	—	8	—
1947								
January	1	244	—	—	—	—	2	—
	2	718	—	—	—	...	10	—
				Local and Imported Store Cattle				
February	3	—	53	—	33	20	—	—
March	1	—	20	—	1	12	—	7
April	19	140	168	89	99	35	—	3
May	5	15	13	15	6	7	20	—
June	9	1,883	35	977	27	13	—	—
July	7	136	15	106	8	30	—	—
August	4	7	12	7	7	7	—	1
	48	2,181	316	1,194	181	124	20	11

APPENDIX 9.

Report by the Agricultural Officer, Gozo, showing the activities of the Agricultural Branch, Gozo, covering the period 1st October 1938 to 30th September 1946.

INTRODUCTION.

During World War II, the cultivation of flowers, raising of vine rootlings, mother plants, fruit seedlings etc. in the Public Gardens and Public Nurseries had to be abandoned owing to the fact that every inch of land available was devoted solely to the cultivation of vegetables and seeds for producing additional foodstuffs for human consumption. All Gardens and Public Plantations suffered greatly and quite a number of plants were lost. When the war was over and things were returning to normal this Branch directed all its efforts to the resumption of prewar cultivations and activities.

Activities during the Agricultural Years 1938/39 to 1943/45.

PUBLIC GARDENS, PLANTATIONS AND NURSERIES.

2. All work in the *Public Gardens* (Villa Rundle) up to the beginning of year 1941 was carried out as in normal times. It consisted mainly of pruning of ornamental trees, shrubs, roses, etc.

3. Cultivation of spring and summer annuals at the Villa gave a very nice display of flowers which was appreciated by the public in general. 248 amateur gardeners have been supplied with flower seedlings from Villa Rundle. The number of shrubs and trees replaced totalled to 284. Owing to the scarcity of water in summer, we did not grow summer flowering plants on a very large scale but we grew sufficient plants in order to maintain stock.

PUBLIC PLANTATIONS.

4. Most of the work in connection with the Public Plantations consisted mainly in constant summer watering which was badly needed, hoeing of circular troughs, pruning, staking and changing the wires securing the stems to the stakes. During this period the number of new trees planted and replaced was 372 and 527 respectively.

5. During the three war years 1942/44, the number of trees destroyed by the public during the severe firewood shortage and trees that died through neglect owing to labour shortage were as follows :—

Morus alba	245	Pistaccia atlantica ...	10
Pinus pinea	79	Ceratonia siliqua ...	15
Nerium-Oleander ...	78	Ailanthus glandolosa ...	24
Lawrus nobilis	9	Melia Azederach ...	23
Myoporum serratum ...	10	Cercis siliquastrum ...	13
Schinus terebinthifolia ...	1	Phytolocca decandra ...	6
Cycas revoluta	1	Araucaria excelsa ...	3
Coprosma	4	Cupressus sempervirens	19
Boungainvillea glabla formosa	3	Eucalyptus gomphocephala	3
Tamarix ispida	295	Oliva europea	3
Poplus alba	52	Schinus molle	4
Celtis	5	Quercus robur	1
Ficus lucida	6	Quercus ilex	6

Nurseries of Ornamental trees and shrubs.

6. The "Tad-Dawwara" "Tal-Krixti" (Kerċem) and "Main Gate" (Victoria) Nurseries were properly cultivated and hundreds of trees and shrubs were propagated both for sale and for planting out in the Public Plantations and other open spaces. The number of trees which were lifted from the said nurseries for planting out and for sale were :—

Nursery (Tad-Dawwara), Kerċem	583 trees
Nursery (Tal-Krixti), Kerċem	24 ,,
Nursery (Main Gate), Victoria	355 ,,
Sold to the public	87 ,,

Vine Nurseries.

7. The American Vine mother plants and rootlings were properly cultivated, hoed, and watered. The number of rootlings applied for and sold from the Vine Nurseries at Kerċem and Victoria was as follows :—

Year	Registered	Sold
1938/39	286,300	130,800
1939/40	238,750	86,600
1940/41	132,680	75,600
1941/42	110,750	92,300
1942/43	6,700	Nil
1943/44	Nil, as all land was dedicated to the production of foodstuffs.	

Sale of stone fruit trees from the same Nurseries amounted to 201.

8. All cultivable land available in the gardens was devoted mainly to seed production. The main crops raised for this purpose were Cauliflowers, carrots, beans, onions, lettuce, maize, cucumbers, etc. All crops did very well and quite a fair amount of seeds was harvested, both for the export trade and for the local sale to farmers and amateur gardeners.

9. The work in the Public Plantations, as already stated, had to be neglected in view of the fact that labour was rather scarce and the little labour available at the time, was utilized for the cultivation of crops.

10. Land available at Chambray Gardens, Mġarr, and other open spaces was devoted to the cultivation of vegetables and fodder crops in order to increase supplies for human consumption and livestock.

11. Intensive propaganda was carried out with the full co-operation of Parish Priests, through the Rediffusion System and public meetings urging the Public and the farming community in particular to do all in their power to grow more and more vegetables and other crops for human consumption in view of the existing siege conditions. 1,459 American Vine mother plants and 273 fruit trees were uprooted to make more room for edible crops.

RABBITRIES.

12. During the war four new Rabbit Centres were opened at Għarb, Xagħra, Nadur and Victoria. The average number of bucks (Flemish Giants) employed was six in each respective Centre covering in all thousands of services. This led to a marked improvement in the weight of meat-producing rabbits. When the war was over, it was decided to close down the centres at Għarb, Nadur and Xagħra.

VACCINATION.

13. **Swine erysipelas.** Compulsory inoculation against swine erysipelas was undertaken in Gozo for the first time on a large scale early in the year 1944.

The following figures give an indication of the thoroughness with which this job was carried out, viz :—

Number of pigs registered for ration purposes	Registered during inoculation	Number of pigs inoculated	Farms visited
1,182	1,123	1,006	464

The number of premises visited, shows the amount of work involved, because in Gozo the average number of pigs kept was two per farm. The attitude of farmers throughout those difficult years was encouraging. There has been no case of obstruction and cheerful and willing co-operation was shown almost throughout. A number of farmers who had not yet been registered came forward voluntarily and asked for the inoculation of their pigs to be carried out. The result of such inoculation was extremely satisfactory as only one case of swine erysipelas was detected in the Abattoir at the time.

14. **Purchase of Ram Lambs.** Forty-four locally bred East Freisian ram lambs varying in age from two to six months were purchased by Government for use, (by herdsmen) with a view of improving meat and milk producing stock of sheep.

MEAT SCHEME.

15. The Meat position in 1942 became critical. It was decided to control the distribution of meat and from 3rd July, 1942, up to 31st October, 1944, the Government subsidized meat slaughtered at the Gozo Abattoir, was sold at the following rates :—

Beef	...	...	...	...	£6. 10. 0 per 100 rotoli
Pork	...	...	...	...	6. 0. 0 do.
Mutton	...	...	...	...	8. 0. 0 do.

The Government in adopting that policy, was able to purchase all meat slaughtered at the Gozo Abattoir for supplying charitable Institutions and Victory Kitchens. Any surplus was sold to butchers for distribution to the public and for shipment to Malta. Both human foodstuffs and fodder for livestock were very scarce, and the Government decided to requisition livestock. From the 26th October to the 31st December 1942, 2,236 sheep and goats were requisitioned and slaughtered at the Gozo Abattoir. During the same period 3,411 lambs and kids were also slaughtered.

SLAUGHTERINGS.

16. The number of livestock slaughterd at the Gozo Abattoir from 1st October 1938 to 30th September 1945, was :—

Year	Equines	Bovines	Swine	Ovines	Caprines
1938/39 ...	—	2,003	4,010	468	3,239
1939/40 ...	1	1,026	4,483	1,189	3,065
1940/41 ...	3	485	3,669	3,036	3,522
1941/42 ...	2	384	3,114	3,786	3,339
1942/43 ...	27	196	114	3,071	5,407
1943/44 ...	3	40	240	1,139	4,312
1944/45 ...	7	243	1,656	2,018	6,164

CEREAL SCHEME.

17. The quantities of cereals purchased by Government in Gozo, during 1942 and 1943 in connection with the Cereal Control Scheme were as follows :—

Year 1942 Barley 85,298 rots. Wheat 318,277 rots. Meslin 210,954 rots. Cost for same was £27,931. 10. 1
1,776. 5. 3 (Brokerage)

Total ... £29,707. 15. 4

Year 1943 Barley 51,671 rots. Wheat 128,272 rots. Meslin 222,985 rots. Cost for same was £12,548. 6. 3

All the above mentioned cereals were sent by Government to the "Pax Flour Mills" of Victoria for milling, except 5,880 tumoli wheat, 409 tumoli meslin, and 179 tumoli barley which were sold by Government to farmers for sowing purposes.

SULPHUR SCHEME.

18. The following quantities of Sulphur were sold by Government as follows:—

1942	11,803 rots. Sulphur for	£ 297. 6. 3
1943/44/45	260,262 rots. Sulphur for	9,071. 12. 4

SPRING POTATO SEED (IMPORTED).

19. During the year 1942/43, 310,472 rots imported Seed Potatoes were sold to farmers at a cost of £6,954. 14. 0d, whilst during 1943/44 380,672 rots were sold at a cost of £7,663. 13. 0d.

SULPHATE OF AMMONIA.

Years 1943/44/45. Quantities received from Malta and sold to farmers were 222,822 rots. Proceeds from sales amounted to £6,237. 11. 0d.

COPPER SULPHATE.

20. **Years 1943/44/45.** Received from Malta 17,727 rots. Proceeds from sales to farmers amounted to £556. 19. 10d.

CITRUS SCHEME.

21. Quantity purchased 1942/43 was 15,793¾ rots. costing £3,158. 15. 0 which was issued on ration basis to the public.

WARE SPRING POTATOES.

22. **Year 1943.**

Quantity purchased by Government 246,985 rots for £6,861. 13. 4½.

Year 1944.

Quantity purchased by Government 956,457 rots for £11,841. 11. 9.

WINTER POTATOES.

23. 1942/43. Purchases were 82,415½ rots. for £8,241. 11. 0 plus £394. 14. 8 paid for brokerage.

1943/44. Received from Malta for sale in Gozo 25,747 rots. Proceeds from same were £525. 17. 11.

1943/44. Purchases in Gozo were 239,989 rots. for £4,405. 10. 0.

ACTIVITIES DURING THE AGRICULTURAL YEAR 1944/45.

24. Towards the end of 1944 things were returning to normal and the war nearing the end, thus Government decided that there was no longer any need of these emergency schemes except that in the case of fodder strict control had to be maintained.

IRRIGATION.

25. Two fresh dams were completed in the Għasri Valley, by the Water Works Department, in order to increase the rain storage capacity reservoirs. In the Marsalforn project, all shafts in the main part of the Valley have been bored to sea level and work in the galleries was well advanced. A site of about 115 tumoli of land was selected near the new reservoir in connection with an irrigation project and the necessary pump and piping were installed but, unfortunately, owing to the persistent drought it was not found possible to make use of this water for irrigation, but it is now being used for the more pressing domestic purposes.

PUBLIC GARDENS "VILLA RUNDLE".

26. About 2,000 trees were manured, hoed, and weeded in the Public Gardens. Owing to lack of labour, proper cultivation and watering, during the war years, a number of trees and shrubs were lost. The number of trees and shrubs replaced was :—

Boungainvillea Glabra formosa	23	Doranta plumieri	23
Coprosma	12	Cercis siliquastrum ...	1
Solanum	4	Veronica hederaefolia ...	18
Datura stramonium ...	18	Geranium zonale	18
Cassia fistula	18	Roses	104
Mesembryanthemum frutexens	16		

A border about 1,000 feet long was newly planted with "Erba Bianca". This border is to be kept 2 feet high to prevent damage by children to flowering plants. The front boundary wall of the Villa which is 200 feet long, of a very old Lantana, has now been replaced by barbed wire 4 feet high thus enabling the public to have a view of the Villa from the outside.

Propagation. 400 cuttings of the best varieties of roses have been selected and propagated, some of which were planted and the remaining sold to the public.

PUBLIC PLANTATIONS.

27. Work on trees growing along roads and other open spaces consisted mainly in pruning about 2,000 trees, hoeing the circular troughs and changing the wire supporting the stem to the stake to avoid cutting the bark. The number of missing and destroyed trees and shrubs replaced was :—

Ficus lucida	4	Washingtonia	3
Tamarix hispida	25	Oliva speciosa	9
Nerium oleander	27	Cupressus sempervirens ...	5
Coprosma	12	Duranta plumieri	1
Rubinia pseudo acacia ...	1	Veronica hederaefolia ...	2
Caricarpa	6	Myoporum serratum ...	40
Mesembryanthemum frutexens	2		

VINE NURSERIES (VICTORIA)

28. All lands under the cultivation of mother plants were dug and kept clean from weeds. The rootlings were hoed and watered. The number of rootlings propagated and sold to farmers was 48,000. About ½ an acre of land was well manured, dug and planted with mother plants as the farmers' demands for American rootlings is increasing yearly.

NURSERIES OF ORNAMENTAL TREES AND SHRUBS.

29. a) **Nursery Main Gate (Victoria).** This Nursery was hoed, weeded and tidied up.

b) **Nursery Tad-Dawwara (Kerċem).** During hostilities this Nursery was abandoned as labour was needed elsewhere, but during the year under review it was kept clean and the plants well pruned and properly cultivated.

Propagation of cuttings consisted in 300 Morus alba, 100 Veronica hederaefolia, 200 Boungainvillea glabra formosa, 200 Tamarix hispida, 300 Coprosma, 191 Laurus nobilis, and 350 ficus lucida.

c) **Kerċem Nursery (Kerċem).** All work in this Nursery consisted mainly in cultivating 1½ acres under lettuce for Seed Production and the cultivation of fruit seedlings. About ½ an acre of land was sown with bitter almonds and planted with stocks of plums etc. for grafting the following year, with the best varieties of fruit trees that there was available at Buskett Public Gardens, and then sold to farmers.

SEED PRODUCTION.

30. About 2 acres of land at Victoria and Kercem Vine Nurseries were cultivated with lettuce for seed production. The seed collected amounted to 1,070 lbs. Thirty six contracts were signed by farmers to cultivate about 4½ acres of land under seed crops of lettuce, carrot, leek and beetroot.

EXPERIMENTAL VINEYARDS.

31. The work in the Experimental Vineyards consisted mainly in pruning and controlling plant pests and diseases. The harvesting weighing of the crop of each experimental vineyard was carried out under the supervision of this Branch. Results of yields are shown in Appendices I to IX. From the results obtained, the following varieties of vines should be strongly recommended to farmers; viz:—

Barbara — To be grafted on Ber. Rip. 8 Ferrari.

Merlot — Thrives well only on black clayey soil. It should be grafted on the following stocks:—

Ber. Rip. 157 11
Ber. Rip. Ferrari 8 B.
Ber. Rip. Teleki 8 Corto
Ber Rip. 5 bb Kober.

Trebbiano is a very good yielder especially on:—

Ber. Rip. 420 A.
Ber. Rip. 8 Ferrari
Ber. Rip. 1101 P.

Cataratto is recommended on Ber. Rip. 420 a. and Ber. Rip. 157 11.

EXPERIMENTAL ORCHARDS.

32. The work in the three Experimental Orchards, that the Department has in Gozo, consisted in the appropriate pruning and treatment against plant diseases.

VACCINATION OF POULTRY.

33. Vaccination of Poultry against Fowl Pox and Fowl Cholera was popularised in Gozo especially amongst the farming community. 4,262 and 2,162 hens have been vaccinated against Fowl Cholera and Fowl Pox respectively.

RABBITRIES.

34. The number of services carried out by the Government owned bucks kept at the Victoria Rabbit Centre, totalled 1,303.

INCUBATORS.

35. Fifty-one applications from farmers and amateur poultry breeders were received for the loan of a Government owned Incubator.

LIVESTOCK.

36. The number of livestock exported from Gozo to Malta was:—

Horses	Mules	Donkeys	Pigs	Sheep	Goats	Bovines
19	6	35	630	618	1,128	236

PLANT PATHOLOGY.

37. Plant disease and pest control consisted mainly in propaganda, giving advice and demonstrating to farmers how to spray their fruit orchards. 43 spraying pumps were given on loan free of charge by this Branch to farmers. 30 private gardens were inspected and treatment carried out as necessary.

THRASHING MACHINES.

38. During the 1945 Thrashing Season, about 311 farmers have threshed their wheat crops with two Government owned Thrashing Machines. Machinery has become very popular amongst the farming community and it is advisable that more machines should be imported.

ACTIVITIES DURING THE AGRICULTURAL YEAR 1945-46.

VILLA RUNDLE PUBLIC GARDENS.

39. All lands at the Villa were treated with organic manure, dug and planted, firstly with a crop of Spring flowering annuals, then with Summer ones. The wonderful display of flowers was very much appreciated by the public after so many years during which these gardens were without flowers. Both the Spring and Summer flower crops were left to seed for export purposes. Several missing plants were replaced including 100 Acacia, 27 Phoenix, 140 Roses of different varieties, 12 Washingtonia, 12 Veronica hederaeifolia, 6 Grahnus, 6 Tecoma, 5 Jacome, 4 Mesembryanthemum frutexens, 1 Delphinium, 2 Cicas revoluta, 1 Coprosma, 1 Boungainvillea glabra formosa, 1 Cercis siliquastrum.

Propagation. 600 cuttings of the best varieties of Roses have been propagated, so that during 1947 some of the old roses will be replaced and the remaining will be sold to the public. Besides the propagation of roses several other different kinds of shrubs, trees, climbers, and plants i.e. Geranium zonale Delphinium, etc. were also cultivated. Three stands of soft stone of a fairly large size have been erected at the Villa, which are being used for the collection of Cactus, Geranium zonale, and other ornamental pot plants respectively.

PUBLIC PLANTATIONS.

40. Work in the Public Plantations consisted mainly in hard pruning of trees, constant hoeing of circular troughs and watering during the summer months. The plants were kept in good order. 996 trees in the Public roads and other open spaces have been planted during the year, of this number, 894 represent replacement of badly damaged and destroyed trees.

KERCEM FRUIT NURSERIES.

41. A considrable number of Citrus trees and other fruit trees were sold from these nurseries to farmers and to amateur gardeners. The propagation of both stone fruit and citrus trees is being increased yearly. Owing to the fact that in previous years the rainfall was very low, farmers have lost a large number of their fruit trees and consequently an increased demand is anticipated. The new fruit Nursery was started, in which the following stock were planted out :—

1,500 Plum Seedlings, 650 Apple Stock, 200 Pomegranates.

About half an acre of land was sown with bitter almonds and with other stocks for grafting early next year.

Fruit cultivation in Gozo deserves every encouragement as fruit growing in one of the most profitable crops to the farming community.

VINE NURSERIES (MAIN GATE VICTORIA).

42. During the year 1944-45, 48,000 American vine rootlings were sold to farmers, whilst during the year under review the number of rootlings produced, was as follows :—

48,980 sold to 278 different farmers, 20,000 sent to Buskett, Public Gardens, Malta, for raising mother plants and another 1,175 planted in Gozo Nurseries, thus increasing our acreage of mother plants by another half an acre.

Adjacent to the boundary wall of the said Nursery 32 orange and mandarin trees of the best selected varieties have been planted.

All the area under American Vine mother plants was properly hoed and kept clean.

Every effort is being made to ensure that the number of vine rootlings will be doubled next season to enable us to meet with the increasing demand by farmers.

Owing to lack of space in other nurseries a small section of this Nursery is dedicated to the raising of shrubs and plants. In this nursery of ornamental trees, 500 seedlings of different varieties of trees have been newly planted and properly cultivated.

The boundary wall facing the Nursery has been fenced with barbed wire and angle irons about 6 feet high. About 600 feet wire netting 4 feet high, was replaced in the main road of the Vine Nursery leading from the Main gate of the Nursery to the Villa, to prevent damage by the public to mother plants.

POTATO VARIETY TRIAL.

43. A trial was carried out with a small sample of "Ulster Commerce" potatoes obtained from the Government of Northern Ireland, 90 lbs of this seed were sown in 3,060 square feet (Approx. 1½ mondello) thus giving ample space to tubers to grow. The tubers were sown on the 19th February, 1946, on dry land rather clayey, and the crop was harvested on the 10th July, 1946.

The plants kept healthy and free from disease for the whole period of their growth. The crop was sprayed three times with Bordeaux Mixture and very satisfactory results were obtained.

Yield results are tabulated hereunder:—

Variety	Yield in rotoli per tumolo				Total yield in qantars per Tumolo of land.
	Grade A.	Grade B.	Grade C.	Grade D.	
ULSTER COMMERCE	Medium size (export)	Large size	Marble size	Seed	
	1,360 rts.	739 rts.	47 rts.	371 rts.	25. 17. qts.

Further trials of this variety of Potato are desirable as yields and health of growth of this variety of Potato is very promising.

NURSERY TAD-DAWWARA (VICTORIA).

44. a) A general cleaning up of this Nursery was carried out during the year. The existing trees and shrubs have been pruned, kept free from diseases and several hundreds of ornamental trees, and shrubs were propagated for sale to the public and for planting out in the Public Plantations and other open spaces. Hundreds of plants in pots and other plants were sold to the Public, Government Schools and other Institutions. A fair amount of revenue was collected from sales from this Nursery. It is expected that, when imports from abroad of new varieties of Plants, shrubs and stocks can be effected this Nursery will be more than self supporting.

NURSERY TAL-GRIXTI (KERĊEM).

b) Good care and attention was paid to this Nursery. Several hundred shrubs and plants are being raised, which will be ready for planting out next season.

NURSERY AT CASTLE HILL (VICTORIA).

c) In this small Nursery a collection of the best varieties of fruit trees which the Department has already under cultivation at Buskett Gardens was started, so that in the near future buds for grafting will be available to farmers. 28 peaches consisting of 7 varieties have been planted. The remainder of this collection will be planted out next season. This Nursery is also used for demonstration purposes.

EXPERIMENTAL ORCHARDS.

45. The three Experimental Orchards which this Branch has under experiment in the Island were attended to carefully. Routine pruning and spraying against plant diseases were carried out.

EXPERIMENTAL VINEYARDS.

46. The five Experimental Vineyards were properly cultivated pruned and the necessary control against plant-pests and diseases carried out. During the period under review vines suffered very badly on account of the low rainfall, but on the

whole, yields were satisfactory. Results of production of each experiment are shown in Appendices "I" to "IX" attached to this report. The yield of one vineyard situated in the limits of Ghasri could not be assessed as the owner through a misunderstanding had already harvested the crop without informing this Department.

PLANT PATHOLOGY.

47. Propaganda on the treatment against the fruit fly (Ceratitis capitata, Wied) was carried out in the country on a large scale. Farmers were to make use as much as possible of the traps which are issued to them free of charge by the Department. The following treatments and demonstrations were carried out during the year, mostly on private property viz :—

a) 18 agreements have been carried out with farmers enabling the Department to carry out free of charge the necessary winter and spring spraying in their fruit orchards against plant diseases, especially against the Carpocapsa pomonella which does considerable damage to fruit growers. Results obtained from the controlling of this disease were very satisfactory and the fall of fruit was less than in previous years. Farmers have appreciated the work that has been performed in their orchards.

b) Treatments against the Zeuzera pirina were carried out in 25 fruit orchards consisting of 2,102 fruit trees.

c) Pruning demonstrations in 9 gardens containing 254 fruit trees.

d) Treatment against Chrysomphalus distyospermi. Morg. with Volk in 12 private gardens containing 455 Citrus trees.

e) Demonstrations in 12 private gardens for the use of fruit fly traps — 296 citrus trees were attended to.

f) Treatment of Vines for Armallaria Mellea in private gardens.

g) Treatment of 215 ornamental trees at Villa Rundle, Public Gardens, against lichens.

h) General cultural advice in 65 private gardens.

THRASHING MACHINES.

48. The use of the Thrashing Machines became still more popular amongst the farming community. During the 1946 Thrashing Season the two Government owned machines worked for 996¾ hours and 310 farmers threshed their wheat crop with these machines. The quantity of wheat threshed was 1,112¾ salms i.e. 20% of the total area of land which was under wheat cultivation.

Expenditure for working the machines amounted to £453.7.11 whilst the revenue collected amounted to £747.11.3.

To cope with all threshing, four to five machines are required in Gozo.

SEED PRODUCTION.

49. The cultivation of crops for Seed Production is still in its infancy and it requires great care and attention. It is rather difficult to persuade farmers who are very conservative, to grow crops for seed production.

The area of lands under crops for seed production at Kercem Vine Nursery was 1 acre, and ½ an acre under Lettuce and Carrots respectively.

About 50 contracts for the production of vegetable seed were entered into with farmers.

LIVESTOCK.

50. The number of livestock exported from Gozo to Malta during 1946 is shown hereunder.

Horses	Mules	Ponies	Donkeys	Swine	Sheep	Goats	Bovines
30	8	3	43	2,080	890	1,758	145

PREVENTION OF ANIMAL DISEASES.

51. Mortality in Poultry and Swine was prevalent during the summer months. The appointment of a full time vaccinator seems to be justifiable. The number of fowls vaccinated against Fowl Cholera and Fowl Pox were 5,774 and 2,066 respectively, whilst 363 pigs were vaccinated against Swine Erysipelas.

GOVERNMENT LIVESTOCK.

52. a) The eight Flemish Giant bucks at Victoria Rabbit Centre, performed 1,004 services.

b) **Stud Bulls.** The number of stud bulls in Gozo is rather small owing to the fact that fresh meat during last years fetched a very good price. For this reason farmers were not anxious to breed bulls for service purposes. With the two Government Stud Bulls that are on loan with farmers 101 services were performed.

c) **Rams.** 4 Rams of the "East Fresian" breed were given on loan to farmers and the number of services performed was 422. The Gozo farmers have taken a special liking to this breed so much so, that 60% of the rams kept by herdsmen, for service purposes, are crosses of this breed.

d) Eighty four services were performed by the Government owned "Saanen" billy goat stationed in Gozo.

GOVERNMENT INCUBATORS.

53. This Branch Office has 6 Incubators of 120 eggs capacity each. These are given on loan to farmers and poultry breeders in strict rotation according to the date of application. 41 applications were received during the year under review.

CIVIL ABATTOIR.

54. The number of animals slaughtered at the Gozo Abattoir during 1946 was the following :—

Type of Livestock	Number	Dead weight in rotoli
Bovines	535	129,760
Swine	3,743	367,414
Sheep	1,994	63,348
Goats	628	12,123
Lambs	6,598	63,538
Kids	537	3,553
Equines	8	1,405

Besides the above, the following livestock was destroyed as unfit for human consumption :—

Equines	Bovines	Sheep	Goats	Swine
1	3	26	11	25

J. Debrincat,
Agricultural Officer, Gozo.

APPENDIX 1.

Privately owned Experimental Vineyard at "Ta' Hamet" Limits of Xaghra, Gozo.

Harvest Season 1915.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
48	Merlot	Ber. Rip. 420 A.	.15	1.75
24	Merlot	Ber. Rip. 157 *11*	.20	5.00
48	Merlot	Ber. Rip. 5 bb Kober	.13	1.63
8	Merlot	Ber. Rip. 34 E. M.	.10	7.50
48	Merlot	Ber. Rip. Ferrari 8	.13	1.63
48	Gabarnet Franc	Ber. Rip. 420 A.	.15	1.75
24	Gabarnet Franc	Ber. Rip. 157 *11*	.15	3.50
48	Gabarnet Franc	Ber. Rip. 5 bb Kober	.17	2.12
48	Gabarnet Franc	Ber. Rip. 34 E. M.	.16	2.00
48	Gabarnet Franc	Ber. Rip. Ferrari 8	.12	1.50
48	Barbera	Ber. Rip. 420 A.	.68	8.50
24	Barbera	Ber. Rip. 157 *11*	.30	7.50
48	Barbera	Ber. Rip. 5 bb Kober	.50	6.25
48	Barbera	Ber. Rip. 34 E. M.	.48	6.00
48	Barbera	Ber. Rip. Ferrari 8	.88	11.00
48	Trebbiano	Ber. Rip. 420 A.	1.04	13.00
24	Trebbiano	Ber. Rip. 157 *11*	.30	7.50
48	Trebbiano	Ber. Rip. 5 bb Kober	.47	5.87
48	Trebbiano	Ber. Rip. 34 E. M.	.53	7.12
48	Trebbiano	Ber. Rip. Ferrari 8	.77	10.40
48	Cataratto	Ber. Rip. 420 A.	1.16	14.50
24	Cataratto	Ber. Rip. 157 *11*	.65	16.25
48	Cataratto	Ber. Rip. 5 bb Kober	.55	6.88
48	Cataratto	Ber. Rip. 34 E. M.	.50	6.25
48	Cataratto	Ber. Rip. Ferrari 8	.95	11.88
48	Gennaruwa	Ber. Rip. 420 A.	1.12	14.00
24	Gennaruwa	Ber. Rip. 157 *11*	.52	13.00
48	Gennaruwa	Ber. Rip. 5 bb Kober	1.04	13.00
48	Gennaruwa	Ber. Rip. 34 E. M.	.65	8.12
48	Gennaruwa	Ber. Rip. Ferrari 8	1.25	15.62

Harvest of crop on 5. 9. 45.

APPENDIX 2.

Privately owned Experimental Vineyard at "Ġnien Is-Sultan" Sannat Road Sannat, Gozo.

Harvest Season 1945.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
45	Gabarnet Franc	Ber. Rip. 5 bb Kober	.36	4.80
48	Gabarnet Franc	Ber. Rip. Ferrari 8	.47	5.88
41	Gabarnet Franc	Ber. Rip. 420 A.	.35½	5.20
41	Gabarnet Franc	Chas. Rip. 41. B.	.53	7.76
48	Sangiovese	Ber. Rip. 5 bb Kober	.55	6.88
46	Sangiovese	Ber. Rip. Ferrari 8	.72	9.34
47	Sangiovese	Ber. Rip. 420 A.	.24½	3.13
49	Sangiovese	Chas. Ber. 41 B.	.58	7.10
50	Barbera	Ber. Rip. 5 bb Kober	.74	8.88
50	Barbera	Ber. Rip. Ferrari 8	1.10	13.20
50	Barbera	Ber. Rip. 420 A.	.67	7.84
50	Barbera	Chas. Ber. 41 B.	1.05	12.60
50	Cataratto	Ber. Rip. 5 bb Kober	.90	10.80
50	Cataratto	Ber. Rip. Ferrari 8	1.17	14.04
50	Cataratto	Ber. Rip. 420 A.	.80	9.60
50	Cataratto	Chas. Ber. 41 B.	.77	9.24
50	Malvasia	Ber. Rip. 5 bb Kober	.39	4.68
50	Malvasia	Ber. Rip. Ferrari 8	.62	7.44
50	Malvasia	Ber. Rip. 420 A.	.37	4.44
50	Malvasia	Chas. Ber. 41 B.	.35	4.20
50	Trebbiano	Ber. Rip. 5 bb Kober	.87	10.44
50	Trebbiano	Ber. Rip. Ferrari 8	.83	9.96
50	Trebbiano	Ber. Rip. 420 A.	.67	8.04
50	Trebbiano	Chas. Ber. 41 B.	.77	9.24

Harvest of crop on 20. 8. 45.

APPENDIX 3.

Privately owned Experimental Vineyard at "Ta' Metallu" limits of Victoria, Gozo.

Harvest Season 1945.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
48	Gabarnet Franc	Ber. Rip. 157 *11*	.57	7.12
22	Gabarnet Franc	Ber. Rip. Teleki 8 Corto	.35	9.55
24	Gabarnet Franc	Ber. Rip. Ferrari 8 B.	.46	11.50
48	Gabarnet Franc	Ber. Rip. 5 bb Kober	.40	5.00
48	Gabarnet Franc	Ber. Rup. 1103 I. P.	.53	6.63
39	Trebbiano	Ber. Rip. 157 *11*	.53	8.16
20	Trebbiano	Ber. Rip. Teleki 8 Corto	.30	9.00
23	Trebbiano	Ber. Rip. Ferrari 8 B.	.27	7.04
48	Trebbiano	Ber. Rip. 5 bb Kober	.70	8.75
48	Trebbiano	Ber. Rup. 1103 I. P.	1.44	18.00
20	Cataratto	Ber. Rip. 157 *11*	.55	16.30
20	Cataratto	Ber. Rip. Teleki 8 Corto	.20	6.00
23	Cataratto	Ber. Rip. Ferrari 8 B.	.27	7.04
48	Cataratto	Ber. Rip. 5 bb Kober	.55	6.88
48	Cataratto	Ber. Rup. 1103 I. P.	.74	9.25
64	Barbera	Ber. Rip. 157 *11*	1.77	14.39
24	Barbera	Ber. Rip. Teleki 8 Corto	.57	14.25
24	Barbera	Ber. Rip. Ferrari 8 B.	.85	21.25
48	Barbera	Ber. Rip. 5 bb Kober	1.45	18.12
48	Barbera	Ber. Rup. 1103 I. P.	1.42	17.75
48	Merlot	Ber. Rip. 157 *11*	1.14	14.25
24	Merlot	Ber. Rip. Teleki 8 Corto	.40	10.00
22	Merlot	Ber. Rip. Ferrari 8 B.	.39	10.65
48	Merlot	Ber. Rip. 5 bb Kober	.05	13.12
48	Merlot	Ber. Rup. 1103 I. P.	.53	6.62
24	Barbera	Ber. Rip. 157 *11*	.55	13.75
18	Barbera	Ber. Rip. Teleki 8 Corto	.24	8.00
23	Barbera	Ber. Rip. Ferrari 8 B.	.29	7.57
48	Barbera	Ber. Rip. 5 bb Kober	.80	10.00
48	Barbera	Ber. Rup. 1103 I. P.	1.13	14.12

Harvest of crop on 30. 8. 45.

APPENDIX 4.

Privately owned Experimental Vineyard at "Ta' Ghammar" limits of Ghasri, Gozo.

Harvest Season 1945.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
26	Trebbiano	Ber. Rip. 8 Ferrari	.55	12.69
26	Trebbiano	Ber. Rip. 34 Ecola	.44	10.15
26	Trebbiano	Ber. Rip. 420 A.	.68	15.69
26	Trebbiano	Ber. Rip. 157 *11*	.30	6.92
26	Trebbiano	Chas. Rip. 41. B.	.43	9.92
27	Cataratto	Ber. Rip. 8 Ferrari	.55	12.22
25	Cataratto	Ber. Rip. 34 Ecola	.44	10.59
26	Cataratto	Ber. Rip. 420 A.	.55	12.69
28	Cataratto	Ber. Rip. 157 *11*	.26	5.57
26	Cataratto	Chas. Rip. 41. B.	.41	9.46
27	Malvasia	Ber. Rip. 8 Ferrari	.49	10.88
24	Malvasia	Ber. Rip. 34 Ecola	.38	9.50
26	Malvasia	Ber. Rip. 420 A.	.32	7.37
26	Malvasia	Ber. Rip. 157 *11*	.24	5.54
27	Malvasia	Chas. Rip. 41. B.	.35	7.77
26	Gabarnet Franc	Ber. Rip. 8 Ferrari	.38	8.77
23	Gabarnet Franc	Ber. Rip. 34 Ecola	.30	6.92
27	Gabarnet Franc	Ber. Rip. 420 A.	.10	2.22
26	Gabarnet Franc	Ber. Rip. 157 *11*	.38	8.77
25	Gabarnet Franc	Chas. Rip. 41. B.	.21	5.04
26	Merlot	Ber. Rip. 8 Ferrari	.15	3.46
24	Merlot	Ber. Rip. 34 Ecola	.13	3.25
24	Merlot	Ber. Rip. 420 A.	.21	5.25
26	Merlot	Ber. Rip. 157 *11*	.13	3.00
26	Merlot	Chas. Rip. 41. B.	.20	4.62
26	Sangiovese	Ber. Rip. 8 Ferrari	.8	1.85
23	Sangiovese	Ber. Rip. 34 Ecola	.11	2.87
28	Sangiovese	Ber. Rip. 420 A.	.12	2.57
27	Sangiovese	Ber. Rip. 157 *11*	.14	3.13
28	Sangiovese	Chas. Rip. 41. B.	.20	4.28

Harvest of crop on 3. 9. 45.

APPENDIX 5.

Privately owned Experimental Vineyard at "Tal-Gidi" limits of St Lawrence, Gozo.

Harvest Season 1945.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
40	Trebbiano	Ber. Rip. 157 *11*	.98	14.55
40	Trebbiano	Ber. Rip. 420 A.	1.07	16.05
40	Trebbiano	Ber. Rip. 5 bb Kober	1.01	15.15
40	Trebbiano	Ber. Rip. 34 E. M.	.88	13.20
10	Trebbiano	Chas. Rip. 41. B.	1.17	17.55
14	Trebbiano	Rup. Du Lot	.26	11.14
39	Malvasia	Ber. Rip. 157 *11*	.42	6.46
40	Malvasia	Ber. Rip. 420 A.	.55	8.25
40	Malvasia	Ber. Rip. 5 bb Kober	.45	6.75
40	Malvasia	Ber. Rip. 34 E. M.	.55	8.25
37	Malvasia	Chas. Rip. 41. B.	.75	12.16
20	Malvasia	Rup. Du Lot	.22	6.66
37	Barbera	Ber. Rip. 157 *11*	.71	11.51
36	Barbera	Ber. Rip. 420 A.	.65	10.83
38	Barbera	Ber. Rip. 5 bb Kober	.60	9.47
37	Barbera	Ber. Rip. 34 E. M.	.53	8.59
37	Barbera	Chas. Rip. 41. B.	.83	13.30
16	Barbera	Rup. Du Lot	.10	3.75
38	Sangiovese	Ber. Rip. 157 *11*	1.30	20.53
38	Sangiovese	Ber. Rip. 420 A.	.40	6.31
16	Sangiovese	Ber. Rip. 5 bb Kober	.32	12.00
38	Sangiovese	Ber. Rip. 34 E. M.	.55	8.69
38	Sangiovese	Chas. Rip. 41. B.	.74	11.69
18	Sangiovese	Rup. Du Lot	.13	4.33
40	Merlot	Ber. Rip. 157 *11*	.10	1.50
40	Merlot	Ber. Rip. 420 A.	.24	3.60
38	Merlot	Ber. Rip. 5 bb Kober	.13	2.05
40	Merlot	Ber. Rip. 34 E. M.	.20	3.00
40	Merlot	Chas. Rip. 41. B.	.31	4.65
40	Merlot	Rup. Du Lot	.43	6.45

Harvest of Crop on 4. 9. 45.

APPENDIX 6.

Privately owned Experimental Vineyard at "Tal-Gidi" limits of St Lawrence, Gozo.

Harvest Season 1946.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
40	Trebbiano	Ber. Rip. 157 *11*	.90	13.50
40	Trebbiano	Ber. Rip. 420 A.	.85	12.75
40	Trebbiano	Ber. Rip. 5 bb Kober	1.00	15.00
40	Trebbiano	Chas. Rip. 41. B.	.95	14.25
40	Trebbiano	Ber. Rip. 33 E. M.	.85	12.75
15	Trebbiano	Rup. Du Lot	.37	14.80
47	Malvasia	Ber. Rip. 157 *11*	.53	6.77
46	Malvasia	Ber. Rip. 420 A.	.30	3.91
37	Malvasia	Ber. Rip. 5 bb Kober	.40	6.48
37	Malvasia	Chas. Rip. 41. B.	.60	9.73
36	Malvasia	Ber. Rip. 33 E. M.	.53	8.33
20	Malvasia	Rup. Du Lot	.30	9.00
37	Barbera	Ber. Rip. 157 *11*	.35	5.81
39	Barbera	Ber. Rip. 420 A.	.50	7.69
36	Barbera	Ber. Rip. 5 bb Kober	.65	10.83
39	Barbera	Chas. Rip. 41. B.	.80	12.30
34	Barbera	Ber. Rip. 33 E. M.	.52	9.17
24	Barbera	Rup. Du Lot	.40	10.00
36	Sangiovese	Ber. Rip. 157 *11*	.70	11.66
38	Sangiovese	Ber. Rip. 420 A.	.72	11.37
37	Sangiovese	Ber. Rip. 5 bb Kober	.72	11.67
40	Sangiovese	Chas. Rip. 41. B.	1.20	18.00
27	Sangiovese	Ber. Rip. 33 E. M.	.48	10.66
21	Sangiovese	Rup. Du Lot	.33	9.43
37	Merlot	Ber. Rip. 157 *11*	.89	14.43
37	Merlot	Ber. Rip. 420 A.	.55	8.92
38	Merlot	Ber. Rip. 5 bb Kober	.66	10.42
40	Merlot	Chas. Rip. 41. B.	.47	7.05
40	Merlot	Ber. Rip. 33 E. M.	.51	7.65
42	Merlot	Rup. Du Lot	.58	8.29

Harvest of crop on 5. 9. 46.

APPENDIX 7.

Privately owned Experimental Vineyard at "Ta' Hamet" limits of Xaghra, Gozo.

Harvest Season 1946.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
48	Gabarnet Franc	Ber. Rip. 157 *11*	.16	2.00
47	Gabarnet Franc	Ber. Rip. 420 A.	.10	1.27
48	Gabarnet Franc	Ber. Rip. 5 bb Kober	.09	1.12
24	Gabarnet Franc	Ber. Rip. 34 E. M.	.12	3.00
48	Gabarnet Franc	Ber. Rip. Ferrari 8	.17	2.12
48	Barbera	Ber. Rip. 157 *11*	.14	1.75
48	Barbera	Ber. Rip. 420 A.	.21	2.62
48	Barbera	Ber. Rip. 5 bb Kober	.37	4.62
24	Barbera	Ber. Rip. 34 E. M.	.26	6.50
48	Barbera	Ber. Rip. Ferrari 8	.37	4.62
48	Trebbiano	Ber. Rip. 157 *11*	.54	6.75
48	Trebbiano	Ber. Rip. 420 A.	.63	7.87
47	Trebbiano	Ber. Rip. 5 bb Kober	.43	5.48
24	Trebbiano	Ber. Rip. 34 E. M.	.37	9.25
48	Trebbiano	Ber. Rip. Ferrari 8	.71	8.87
48	Cataratto	Ber. Rip. 157 *11*	.75	9 73
48	Cataratto	Ber. Rip. 420 A.	.33	4.12
48	Cataratto	Ber. Rip. 5 bb Kober	.50	6.25
24	Cataratto	Ber. Rip. 34 E. M.	.50	12.50
48	Cataratto	Ber. Rip. Ferrari 8	.62	7.75
44	Gennaruwa	Ber. Rip. 157 *11*	1.17	15.95
44	Gennaruwa	Ber. Rip. 420 A.	.80	10.90
48	Gennaruwa	Ber. Rip. 5 bb Kober	1.10	13.75
23	Gennaruwa	Ber. Rip. 34 E. M.	.50	13.04
48	Gennaruwa	Ber. Rip. Ferrari 8	1.35	16.87

Harvest of crop on 11. 9. 46.

APPENDIX 8.

Privately owned Experimental Vineyard at "Gnien Is-Sultan" Sannat Road, Sannat, Gozo.

Harvest Season 1946.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
44	Gabarnet Franc	Ber. Rip. Teleki 8	.37	5.04
46	Gabarnet Franc	Chas. Rip. 41 B.	.90	11.74
40	Gabarnet Franc	Ber. Rip. 420 A.	.37	5.55
49	Gabarnet Franc	Ber. Rip. 5 bb Kober	.78	9.57
49	Sangiovese	Ber. Rip. Teleki 8	.52	6.37
50	Sangiovese	Chas. Rip. 41 B.	1.19	14.28
43	Sangiovese	Ber. Rip. 420 A.	.45	3.49
50	Sangiovese	Ber. Rip. 5 bb Kober	.72	8.64
48	Barbera	Ber. Rip. Teleki 8	.91	11.37
50	Barbera	Chas. Rip. 41 B.	82	9.83
50	Barbera	Ber. Rip. 420 A.	.45	5.40
50	Barbera	Ber. Rip. 5 bb Kober	.57	6.84
50	Cataratto	Ber. Rip. Teleki 8	1.55	18.60
50	Cataratto	Chas. Rip. 41 B.	1.26	15.12
50	Cataratto	Ber. Rip. 420 A.	1.00	12.00
50	Cataratto	Ber. Rip. 5 bb Kober	1.15	13.80
50	Trebbiano	Ber. Rip. Teleki 8	.70	8.40
50	Trebbiano	Chas. Rip. 41 B.	.73	8.76
50	Trebbiano	Ber. Rip. 420 A.	.55	6.60
50	Trebbiano	Ber. Rip. 5 bb Kober	.60	7.20

Harvest of crop on 6. 9. 46.

APPENDIX 9.

Privately owned Experimental Vineyard at "Ta' Metallu" Victoria, Gozo.

Harvest Season 1946.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
40	Trebbiano	Ber. Rip. 157 *11*	.40	6.00
23	Trebbiano	Teleki Ferrari 8 B.	.25	6.52
24	Trebbiano	Ber. Rip. 8 Corto	.23	5.75
48	Trebbiano	Ber. Rip. 5 bb Kober	.57	7.12
48	Trebbiano	Paulson 1103 I. P.	1.15	14.37
39	Cataratto	Ber. Rip. 157 *11*	.30	4.62
24	Cataratto	Teleki Ferrari 8 B.	.25	6.25
24	Cataratto	Ber. Rip. 8 Corto	.10	2.50
48	Cataratto	Ber. Rip. 5 bb Kober	.33	4.12
48	Cataratto	Paulson 1103 I. P.	1.05	13.12
20	Barbera	Ber. Rip. 157 *11*	.23	6.90
16	Barbera	Teleki Ferrari 8 B.	.—	.—
12	Barbera	Ber. Rip. 8 Corto	.07	3.50
26	Barbera	Ber. Rip. 5 bb Kober	.55	12.69
42	Barbera	Paulson 1103 I. P.	.84	12.00
40	Merlot	Ber. Rip. 157 *11*	.47	7.05
24	Merlot	Teleki Ferrari 8 B.	.38	9.50
24	Merlot	Ber. Rip. 8 Corto	.45	11.25
48	Merlot	Ber. Rip. 5 bb Kober	1.20	15.00
48	Merlot	Paulson 1103 I. P.	1.05	13.12
48	Gabarnet Franc	Ber. Rip. 157 *11*	.55	6.87
24	Gabarnet Franc	Teleki Ferrari 8 B.	.60	15.00
24	Gabarnet Franc	Ber. Rip. 8 Corto	.46	11.50
48	Gabarnet Franc	Ber. Rip. 5 bb Kober	.95	11.87
48	Gabarnet Franc	Paulson 1103 I. P.	.93	11.62
48	Barbera	Ber. Rip. 157 *11*	.90	11.25
24	Barbera	Teleki Ferrari 8 B.	.66	16.50
24	Barbera	Ber. Rip. 8 Corto	.60	15.00
48	Barbera	Ber. Rip. 5 bb Kober	1.70	21.70
48	Barbera	Paulson 1103 I. P.	2.25	28.12

Harvest of crop on 10. 9. 46.

APPENDIX 10.

Report by the Agricultural Officer, Gozo, on the Principal Activities of the Branch Office of Agriculture, Gozo, for the Agricultural Year 1946/47.

INTRODUCTORY

During the year under review this Branch continued the cultivation and propagation of the American Vine and fruit seedlings, and undertook those activities which had to be abondoned during the war years as every inch of land in Nurseries, Public Gardens, and other open spaces was dedicated to the prouction of additional foodstuffs. Moreover, this Branch has endeavoured to reproduce in a smaller scale and as far as funds permitted, all those activities engaged upon by the Department of Agriculture in Malta.

RAINFALL.

2. The total rainfall registered in Gozo was 15.11 inches distributed as follows :—

	1946	
October		3.03 ins.
November		2.48 ,,
December		6.74 ,,
	1947	
January		1.83 ,,
February		.37 ,,
March		.12 ,,
April		.54 ,,
May		Nil. ,,
June		Nil. ,,
July		Nil. ,,
August		Nil. ,,
September		Nil. ,,

The agricultural year 1946/47 caused great anxiety owing to rainfall shortage. The first class water supply in the Public Gardens and other Nurseries had to be suspended during the summer months, but special arrangements were made to protect plants and to cope with the diminished water supply. As a result comparatively very few plants were lost.

VILLA RUNDLE PUBLIC GARDENS.

3. All available lands were heavily manured with natural manure, well dug and prepared for planting. Spring and Summer annuals were planted out all over the gardens resulting in an attractive display of flowers which was very much admired by the general public. Both Spring and Summer flower crops after flowering were allowed to seed. The seeds collected were passed to the Seed Section, Malta, for export.

The quantities of seed collected were :—

Zinnias	8¼ lbs.
Scabiosa Monarch	3¾ ,,
Sweet Peas	16½ ,,
Linum Rubrum G.	35½ ,,
Nasturtium G. Y.	3½ ,,
Viola Large	5 ozs.
Statice Art. Shade	428 lbs.
Dimorphoteca	19½ ,,
Larkspur	2½ ,,

The following improvements have been made in these Gardens, viz :—Building a small glass house measuring 35 feet by 4 feet, fixing barbed wire along the boundary walls and planting all borders with shrubs.

The following trees and shrubs have been replaced or added where missing :—

2	Cercis siliquastrum	12	Coprasma
1	Acacia	5	Veronica
4	Cassia	3	Duranta
2	Eraucaria	4	Ibiscus
1	Climbing Rose	6	Datura
129	Bush Roses	1	Washingtonia
4	Tecoma	12	Daises

The following have been sold to the Public :—

315	Bunches of flowers	11	Bundles of green
1,000	Flower plants	15	Wreaths

About 300 cuttings of the best and selected varieties of Roses have been propagated, thus, early next year some of the roses which have been rather deteriorating because of old age will be replaced and others added where missing. Besides the propagation of roses several hundreds of other cuttings such as Delphinium, Gerami, Veronica have been propagated for planting out next year and for sale to the public.

AGRICULTURAL AND INDUSTRIAL SHOW 1947.

4. The Gozo Agricultural and Industrial Show was held also this year at the Villa Rundle Public Gardens on the 14th and 15th August, 1947, on the occasion of the Feast of St. Mary.

The show was an outstanding success both on account of the quality and of the quantity of the exhibits which were comprised in 1500 entries. Exhibits were well displayed and their variety exceeded the previous Show. The attendance was extremely good and very representative — farmers from all villages in Gozo paid a visit to the Show and were impressed with the high standard attained through the help given by this Branch.

PUBLIC PLANTATIONS.

5. Maintenance work on the numerous trees along the public roads and other open spaces throughout the Island consisted mainly in pruning, hoeing the troughs, changing the wire supporting the stem to the stake, where necessary, and watering the newly planted trees during the Summer months. All this work demanded constant care and attention.

PLANTING OF NEW TREES AND SHRUBS.

6. The total number of trees and shrubs planted during the year under review amounted to 103. Of this number 50 represent replacement of trees badly damaged.

From a general survey, which was carried out during April 1947, it resulted that the number of trees missing from public roads and other open spaces amounted to 1436. These trees were mainly destroyed during the war years for firewood. Moreover, certain cases of vandalism have been met with, which necessitated recourse to police intervention.

"TAD-DAWWARA" NURSERY.

7. The area of land of this Nursery has been increased by 4/6th of a Tumolo as the space available for propagating trees, etc., was insufficient. Its boundary walls have been well built up and surrounded by barbed wire, so as to prevent boys from entering and damaging seedlings.

Thousands of seedling of different trees and shrubs and other ornamental plants in pots are being propagated for planting out in the coming years in Public Gardens and Plantations in Malta and Gozo, for sale to the public and for supplying Government Institutions. The importation of new varieties of ornamental plants and shrubs would enhance the value of this Nursery.

Trees, shrubs, and plants in pots were supplied from this Nursery to Public Gardens, Plantations and for sale to the public, as follows :—

Used for Villa Rundle.	*Public Plantations Gozo.*	*Public Plantations Malta.*
61 Plants in Pots	103 Trees and Shrubs	4 Carob Trees
		48 Tamarix
Sold to the Public.		22 Casuarina
546 Plants in Pots		4 Eucalyptus

A small glass house 4 ft. by 20 ft. has been erected in this Nursery for raising and protecting delicate seedlings which do not resist the cold weather.

NURSERY "TA' PUTIRJAL", VICTORIA.

8. The existing trees and seedlings in this Nursery have been properly cultivated, hoed and watered during the Summer months. About 200 seedlings of different ornamental trees have been propagated.

NURSERY "CASTLE HILL".

9. In this Nursery, although rather small, a collection of fruit trees which have already given very good results at Buskett, has been planted out and within 2 years time it will serve, for demonstration purposes, to Gozo fruit growers who moreover may be supplied with graftings, free of charge or at a nominal price, in order that these selected varieties may be propagated and cultivated in Gozo in the interests of fruit-culture.

The collection consists of the following :—

Nectarines.	*Apples.*	*Peaches.*
2 Red	7 Mixed Var	4 Red Bird
3 White		4 Trionfo Liscio
		4 Amsden
		4 Alton
		4 South Heaven
		4 "Tal-Karmnu" (Local Variety)
		4 May Flower

Apricots.	*Pears.*	*Plums.*
5 Mixed Var	5 D'Amanlis	3 Golden
4 Damaskina	5 Coscia	4 D'Argens
	7 Bambinella	4 Nethely
		4 Santa Rosa
		4 Japanese

The boundary walls of this Nursery have been surrounded with barbed wire to prevent boys from pilfering fruit and damaging the trees.

VITICULTURE

10. The Vine Nurseries have been well established. Their main cultivation consisted in hoeing, pruning and watering the tender mother plants where necessary.

The area under mother plants has been increased by another 1 tumolo. The vine rootlings planted were 300 Rupestris du Lot. and 200 Berlandieri Rupestris 420A.

The total area under cultivation of mother plants is 11 $^{54}/_{60}$ Tumoli cinsisting of the following stocks :—

Rupestris Du Lot.	10 Tumoli
Berlandieri 420 A.	37/60 Tumoli
Riparia Salonis	40/60 Tumoli
Berlandieri Rupestris (R. 83. I. P.)	37/60 Tumoli
Total	11 $^{54}/_{60}$ Tumoli

The demand by farmers for vine rootlings is increasing yearly by leaps and bounds. Every effort is being made by this Branch to propagate vine rootlings so that the demand by farmers next year will be met in full.

This year about 250,000 vine cuttings have been propagated but owing to shortage of rainfall during the winter, a considerable number of rootlings failed to grow.

The number of vine rootlings applied for by 320 farmers amounted to 256,000 but only 96,813 rootlings could be supplied. Every farmer was supplied in proportion to his requirements.

CITRUS NURSERY

11. Owing to lack of space and the nature of soil at "Ta' Kerċem" Nurseries an area of about 1 Tumolo of land has been taken over from the Victoria Vine Nurseries and planted with Citrus seedlings as the demands for Citrus trees have been increasing yearly.

About 1,300 Citrus seedlings have been planted for grafting during the coming year.

POTATO VARIETY TRIAL

12. A second trial with "Ulster Commerce" seed potatoes was carried out on a piece of dry land measuring 4,248 sq. feet (approx. 1.7 Mondelli). 156 rtal seed were sown on the 29th September, 1946, and the crop was harvested on the 10th February, 1947. The plants kept healthy and free from disease throughout the trial. The cultural operations during growth consisted in two hoeings and in two sprayings with Bordeaux Mixture.

The yield was as shown hereunder :—

Variety	Yield in rtal per tumolo				Total yield per Tumolo (Qantars).
	Grade A.	Grade B.	Grade C.	Grade D.	
ULSTER COMMERCE	(Medium)	Large size	Marble	Seed	
	672 rtal	450 rtal	171 rtal	871 rtal	21.64

From results obtained from the above trial and the previous one which was carried out during 1945-46, it is evident that this variety of potatoes is worth cultivating on a larger scale.

"TA' KERĊEM" NURSERIES

13. These nurseries were originally intended for the cultivation of American Vine mother plants and rootlings but after several trials it was found that these lands could be better utilized for other purposes than for the propagation of vines, which did not thrive well on the quality of soil.

The area of land comprising these nurseries consists in about 11 Tumoli of which 6 Tumoli have been planted with stock seedlings of plums etc. and another 2 Tumoli were sown with bitter almonds so that next year the seedlings from same will be grafted with the best varieties of peaches, plums, etc. existing at present.

The number of fruit trees sold from these Nurseries were :—

86 Peaches, Plums, etc.	5 Olives
8 Lemons	4 Walnuts
36 Oranges	

Besides the sale of the above trees another 388 fruit trees were sent from Buskett Public Gardens and sold in Gozo.

It is hoped that next year we will be able to cope with all the farmers' demands for fruit trees from this Nursery. The remaining land available at this Nursery has been sown under forages for feeding Government owned stud livestock in Gozo.

EXPERIMENTAL VINEYARDS.

14. The five experimental vineyards which the Department has in the country have been properly attended to; pruning and control against plant diseases was carried out at the appropriate time under the supervision of the Department.

Vine trees have suffred very badly owing to the general shortage of rain which we experienced during the past winter. The yields from each plot are shown in Tables 1 to 5 attached to this Report. It will be seen that certain varieties have given unsatisfactory results.

THRESHING MACHINES

15. During the summer months this Branch operated three Threshing Machines which were introduced in Gozo by the Department with outstanding success. These machines were run 961 hours and the quantity of wheat threshed amounted to 113 salms representing about 20% of the total area of land under wheat cultivation.

The total expenditure for running these machines amounted to £593. 19. 9 whilst revenue collected from work done amounted to £720. 15. 0.

The introduction of these machines in these Islands was a boon to the farming community as threshing work which requires a week to carry out under the old system is now being done in one day.

SEED PRODUCTION

16. Besides the flower crops which have been grown for seed production at Villa Rundle Gardens another 2 tumoli of land were grown with lettuce seed.

The quantity of Seed harvested amounted to 266 lbs.

During the year fifty contracts for the production of vegetables seed were made with local farmers.

PLANT PATHOLOGY

17. This Branch has been making every effort to persuade growers to take all the necessary steps to control plant pests and diseases as much as possible. General propaganda is being carried out on a large scale all over the Island.

The following treatments and demonstrations were carried out during the year, mainly on private lands :—

(a) 34 agreements were made with farmers for the necessary winter and spring spraying of their fruit orchards for the control of the "Carpocapsa pomonella" which is causing a considerable amount of damage yearly especially on apple and pear trees.

Results obtained were satisfactory as the fall of fruit was less than in previous years by at least 25%. All the farmers whose orchards were controlled by the Department were very satisfied with the work done.

(b) Treatments against the Zerzera Pirina have been carried out in several private orchards. The number of apple trees treated was 1,149.

(c) Demonstrations as to how fruit fly traps should be used were carried out in 45 private gardens.

(d) Treatments against Aphis and Chrysomphalus were made on 2,402 ornamental trees, shrubs and citrus trees in the Public Gardens, Government Nurseries, etc.

(e) 106 inspections were effected in private gardens advising owners on methods of cultivation and of controlling plant diseases.

(f) Spraying 3½ Tumoli of land under vines against fungoid diseases and 6 Tumoli melons against Aphis.

(g) Treatment against the Diloba on 1715 almond and other fruit trees.

(h) 43 spraying machines were given on loan, free of charge as an inducement to farmers to treat their crops.

EXPORT OF LIVESTOCK

18. The number of livestock exported from Gozo to Malta were :—

Horses	Mules	Ponies	Donkeys	Swine	Ovines	Caprines	Bovines
52	35	14	145	1,995	2,669	8,085	199

PREVENTION OF ANIMAL DISEASES

19. Swine and poultry mortality was prevalent during the summer months. It is considered that there is ample scope for the employment of a whole time Vaccinator in Gozo. The present arrangements whereby an Abattoir official is carrying out vaccinations, as time permits, is most unsatisfactory.

The number of Swine and Poultry vaccinated were as follows :—

Swine		Poultry	
Erysipelas	Fever	Cholera	Pox
256	17	1,520	1,177

CIVIL ABATTOIR (Slaughterings of Livestock)

20. The number of livestock slaughtered at the Gozo Abattoir mainly for consumption in Malta were :—

Cattle	Rtal	Pigs	Rtal	Sheep	Rtal	Lambs	Rtal
604	152,275	2,634	244,205	2,091	72,790	6,198	60,148

Goats	Rtal	Kids	Rtal	Equines	Rtal
1,348	25,008	781	4,808	17	2,415

The number of livestock condemned and destroyed as unfit for human consumption were :—

Bovines	Swine	Sheep	Goats	Kids	Equines
2	12	21	22	2	3

LOAN OF INCUBATORS

21. The six Government incubators of 120 egg capacity each were given on loan to farmers and amateur poultry breeders at a nominal charge of 5s. per batch. As these incubators have now been in use for many years their replacement is indicated.

RABBIT BREEDING

22. The average number of Flemish Giant Bucks kept at the Villa Rundle Rabbit Centre, during the year, was 8 which were mated to 1,263 does.

This service is given free of charge as an encouragement to rabbit breeders to mate their does with Flemish Giant Bucks as this breed has given most satisfactory results.

LOAN OF GOVERNMENT-OWNED STUD ANIMALS.

23. **Stud Bulls.** The number of stud bulls in Gozo is very limited and those kept by farmers are not pure bred. I would recommend very strongly that Government should import new blood as the stock we have has been deteriorating through in-breeding.

At present Government owns 2 Stud Bull in Gozo which are on loan with farmers. The services covered by them during the year amounted to 94.

Rams. There are 5 Government-owned East Fresian Rams on loan with farmers and the services covered totalled to 1,155.

The Gozitan farmers are fully alive to the potentialities of this breed as may be seen from the fact that 60% of the service rams kept by herdsmen are East Fresian crosses. The crossing of the local sheep with East Fresian Rams has led to specific improvement in milk yield, weight of carcase and quality of wool.

Saanen billy-goats. The original prejudice against Saanen billy-goats is fading out fastly. Herdsmen complained that these billies were too heavy for servicing local goats but experience has shown this to be incorrect and the advantages of this breed in improving the milk yield and general confirmation of the animal are now being appreciated to such an extent that this Branch has received many requests for the loan of billy-goats of this breed which, unfortunately, cannot be met at present.

JOHN DEBRINCAT,
Agricultural Officer,
Gozo.

Privately owned Experimental Vineyard at "Ta' Ghammar" limits of Ghasri, Gozo.

Harvest Season 1947.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
32	Trebbiano	Ber. Rip. Tel. 8 Ferrari	.33	6.18
28	Trebbiano	Ber. Rip. 34 E. Cole	.27	5.78
28	Trebbiano	Ber. Rip. 420 A.	.30	6.43
27	Trebbiano	Chas. Rip. 41. B.	.24	5.33
27	Trebbiano	Ber. Rip. 157 *11*	.20	4.44
28	Cataratto	Ber. Rip. Tel. 8 Ferrari	.31	6.64
28	Cataratto	Ber. Rip. 34 E. Cole	.41	8.78
28	Cataratto	Ber. Rip. 420 A.	.27	5.78
28	Cataratto	Chas. Rip. 41. B.	.18	3.86
28	Cataratto	Ber. Rip. 157 *11*	.20	4.29
31	Malvasia	Ber. Rip. Tel. 8 Ferrari	.33	6.39
28	Malvasia	Ber. Rip. 34 E. Cole	.22	4.71
27	Malvasia	Ber. Rip. 420 A.	.21	4.66
26	Malvasia	Chas. Rip. 41. B.	.18	4.15
28	Malvasia	Ber. Rip. 157 *11*	.15	3.21
32	Gabarnet Franc	Ber. Rip. Tel. 8 Ferrari	.14	2.62
28	Gabarnet Franc	Ber. Rip. 34 E. Cole	.13	2.78
26	Gabarnet Franc	Ber. Rip. 420 A.	.11	2.54
28	Gabarnet Franc	Chas. Rip. 41. B.	.13	2.78
28	Gabarnet Franc	Ber. Rip. 157 *11*	.20	4.29
23	Barbera	Ber. Rip. Tel. 8 Ferrari	.05	1.30
7	Barbera	Ber. Rip. 34 E. Cole	.07	6.00
8	Barbera	Ber. Rip. 420 A.	.09	6.75
21	Barbera	Chas. Rip. 41. B.	.11	3.14
15	Barbera	Ber. Rip. 157 *11*	.14	5.60
27	Sangiovese	Ber. Rip. Tel. 8 Ferrari	.13	2.88
28	Sangiovese	Ber. Rip. 34 E. Cole	.11	2.15
19	Sangiovese	Ber. Rip. 420 A.	.07	2.21
25	Sangiovese	Chas. Rip. 41. B.	.09	2.16
23	Sangiovese	Ber. Rip. 157 *11*	.11	2.87

Harvest of crop on 2. 9. 47.

Privately owned Experimental Vineyard at "Tal-Gidi" St Lawrence, Gozo.

Harvest Season 1947.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qrs. p. t. of land 600 v. p. tum.
40	Trebbiano	Ber. Rip. 157 *11*	.75	11.25
40	Trebbiano	Ber. Rip. 420 A.	.71	10.65
40	Trebbiano	Ber. Rip. Tel. 5 bb Kober	.84	12.60
40	Trebbiano	Chas. Rip. 41. B.	.71	10.65
40	Trebbiano	Ber. Rip. 34 E. M.	.68	10.20
16	Trebbiano	Rup. Du Lot	.25	18.75
39	Malvasia	Ber. Rip. 157 *11*	.44	6.77
39	Malvasia	Ber. Rip. 420 A.	.41	6.31
37	Malvasia	Ber. Rip. Tel. 5 bb Kober	.45	7.30
38	Malvasia	Chas. Rip. 41. B.	.38	6.00
37	Malvasia	Ber. Rip. 34 E. M.	.50	8.11
26	Malvasia	Rup. Du Lot	.47	10.85
40	Barbera	Ber. Rip. 157 *11*	.35	5.25
40	Barbera	Ber. Rip. 420 A.	.36	5.40
38	Barbera	Ber. Rip. Tel. 5 bb Kober	.53	8.37
40	Barbera	Chas. Rip. 41. B.	.57	8.55
38	Barbera	Ber. Rip. 34 E. M.	.40	6.32
30	Barbera	Rup. Du Lot	.36	7.20
38	Sangiovese	Ber. Rip. 157 *11*	.47	7.43
36	Sangiovese	Ber. Rip. 420 A.	.62	10.33
38	Sangiovese	Ber. Rip. Tel. 5 bb Kober	.55	8.68
40	Sangiovese	Chas. Rip. 41. B.	.70	10.50
37	Sangiovese	Ber. Rip. 34 E. M.	.39	6.32
32	Sangiovese	Rup. Du Lot	.37	6.94
39	Merlot	Ber. Rip. 157 *11*	.43	6.61
40	Merlot	Ber. Rip. 420 A.	.51	7.65
40	Merlot	Ber. Rip. Tel. 5 bb Kober	.55	8.25
40	Merlot	Chas. Rip. 41. B.	.71	10.65
40	Merlot	Ber. Rip. 34 E. M.	.63	9.45
60	Merlot	Rup. Du Lot	1.33	13.30

Harvest of crop on 29. 8. 47.

Privately owned Experimental Vineyard at "Ta' Hamet" limits of Xaghra, Gozo.

Harvest Season 1947.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
12	Trebbiano	Ber. Rip. Tel. 8 Ferrari	.—	.—
6	Trebbiano	Ber. Rip. 34 E. M.	.—	.—
16	Trebbiano	Ber. Rip. Tel. 5 bb Kober	.04	1.50
4	Trebbiano	Ber. Rip. 420 A.	.—	.—
16	Trebbiano	Ber. Rip. 157 *11*	.06	2.25
52	Gabarnet Franc	Ber. Rip. Tel. 8 Ferrari	.09	1.04
26	Gabarnet Franc	Ber. Rip. 34 E. M.	.04	.92
53	Gabarnet Franc	Ber. Rip. Tel. 5 bb Kober	.08	.91
50	Gabarnet Franc	Ber. Rip. 420 A.	.11	1.32
49	Gabarnet Franc	Ber. Rip. 157 *11*	.10	1.28
44	Barbera	Ber. Rip. Tel. 8 Ferrari	.48	6.54
22	Barbera	Ber. Rip. 34 E. M.	.22	6.00
44	Barbera	Ber. Rip. Tel. 5 bb Kober	.52	7.52
44	Barbera	Ber. Rip. 420 A.	.39	5.32
44	Barbera	Ber. Rip. 157 *11*	.47	6.41
55	Trebbiano	Ber. Rip. Tel. 8 Ferrari	.47	5.15
28	Trebbiano	Ber. Rip. 34 E. M.	.12	2.57
56	Trebbiano	Ber. Rip. Tel. 5 bb Kober	.26	2.78
56	Trebbiano	Ber. Rip. 420 A.	.34	3.64
56	Trebbiano	Ber. Rip. 157 *11*	.45	4.82
40	Cataratto	Ber. Rip. Tel. 8 Ferrari	.45	6.75
20	Cataratto	Ber. Rip. 34 E. M.	.22	6.60
40	Cataratto	Ber. Rip. Tel. 5 bb Kober	.23	3.45
39	Cataratto	Ber. Rip. 420 A.	.16	2.46
40	Cataratto	Ber. Rip. 157 *11*	.34	5.10
47	Gennaro	Ber. Rip. Tel. 8 Ferrari	.71	9.06
22	Gennaro	Ber. Rip. 34 E. M.	.54	14.76
43	Gennaro	Ber. Rip. Tel. 5 bb Kober	.65	9.07
41	Gennaro	Ber. Rip. 420 A.	.61	8.92
45	Gennaro	Ber. Rip. 157 *11*	1.02	13.60

Harvest of crop on 9. 9. 47.

Privately owned Experimental Vineyard at "Ta' Metallu" Victoria, Gozo.

Harvest Season 1947.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
39	Trebbiano	Ber. Rip. 157 *11*	.39	5.07
23	Trebbiano	Ber. Rip. Ferrari 8 B.	.23	7.30
24	Trebbiano	Ber. Rip. 8 Corto	.26	6.50
48	Trebbiano	Ber. Rip. Tel. 5 bb Kober	.80	10.00
47	Trebbiano	Ber. Rip. 1103 I. P.	1.08	13.79
33	Cataratto	Ber. Rip. 157 *11*	.43	7.82
22	Cataratto	Ber. Rip. Ferrari 8 B.	.18	4.91
24	Cataratto	Ber. Rip. 8 Corto	.22	5.50
42	Cataratto	Ber. Rip. Tel. 5 bb Kober	.65	9.28
47	Cataratto	Ber. Rip. 1103 I. P.	.72	9.19
36	Barbera	Ber. Rip. 157 *11*	.46	7.66
14	Barbera	Ber. Rip. Ferrari 8 B.	.08	3.43
17	Barbera	Ber. Rip. 8 Corto	.12	4.24
42	Barbera	Ber. Rip. Tel. 5 bb Kober	.67	9.57
45	Barbera	Ber. Rip. 1103 I. P.	1.36	18.13
47	Merlot	Ber. Rip. 157 *11*	.83	10.59
24	Merlot	Ber. Rip. Ferrari 8 B.	.46	11.50
21	Merlot	Ber. Rip. 8 Corto	.56	14.00
48	Merlot	Ber. Rip. Tel. 5 bb Kober	.82	10.25
50	Merlot	Ber. Rip. 1103 I. P.	1.28	15.36
56	Gabarnet Franc	Ber. Rip. 157 *11*	.55	5.89
24	Gabarnet Franc	Ber. Rip. Ferrari 8 B.	.42	10.50
21	Gabarnet Franc	Ber. Rip. 8 Corto	.32	8.00
48	Gabarnet Franc	Ber. Rip. Tel. 5 bb Kober	.75	9.37
54	Gabarnet Franc	Ber. Rip. 1103 I. P.	.78	8.66
64	Barbera	Ber. Rip. 157 *11*	1.26	11.81
24	Barbera	Ber. Rip. Ferrari 8 B.	.42	10.50
24	Barbera	Ber. Rip. 8 Corto	.34	8.50
46	Barbera	Ber. Rip. Tel. 5 bb Kober	1.80	23.49
56	Barbera	Ber. Rip. 1103 I. P.	2.31	24.75

Harvest of crop on 30. 8. 47.

Privately owned Experimental Vineyard at "Ġnien Is-Sultan" Sannat, Road, Sannat, Gozo.

Harvest Season 1947.

No. of plants under experiment	Varieties of Vines	Stock on which vines are grafted	Production in qantars	Pro. in qtrs. p. t. of land 600 v. p. tum.
48	Gabarnet Franc	Ber. Rip. Teleki 8.	.29	3.62
46	Gabarnet Franc	Chas. Rip. 41 B.	.31	4.04
43	Gabarnet Franc	Ber. Rip. 420 A.	.29	4.04
46	Gabarnet Franc	Ber. Teleki 5 bb Kober	.23	3.00
50	Sangiovese	Ber. Rip. Teleki 8.	.42	5.04
50	Sangiovese	Chas. Rip. 41 B.	.67	8.04
46	Sangiovese	Ber. Rip. 420 A.	.10	1.30
50	Sangiovese	Ber. Teleki 5 bb Kober	.27	3.24
49	Barbera	Ber. Rip. Teleki 8.	.82	10.04
49	Barbera	Chas. Rip. 41 B.	.50	6.12
50	Barbera	Ber. Rip. 420 A.	.36	4.32
50	Barbera	Ber. Teleki 5 bb Kober	.48	5.76
50	Cataratto	Ber. Rip. Teleki 8.	1.08	12.96
50	Cataratto	Chas. Rip. 41 B.	.86	10.32
50	Cataratto	Ber. Rip. 420 A.	.90	10.80
50	Cataratto	Ber. Teleki 5 bb Kober	.89	10.68
28	Barbera	Ber. Rip. Teleki 8.	.57	12.21
41	Barbera	Chas. Rip. 41 B.	.72	10.53
42	Barbera	Ber. Rip. 420 A.	.26	3.71
40	Barbera	Ber. Teleki 5 bb Kober	.78	11.70
50	Trebbiano	Ber. Rip. Teleki 8.	.55	6.60
50	Trebbiano	Chas. Rip. 41 B.	.72	8.64
50	Trebbiano	Ber. Rip. 420 A.	.46	5.52
50	Trebbiano	Ber. Teleki 5 bb Kober	.62	7.59

Harvest of crop on 1. 9. 47.

APPENDIX II.

Report by the Horticultural Officer on the Seed Production Section for the period 1942 to 1947.

BIRTH OF THE INDUSTRY.

The Seed Production Industry started in Malta in 1942 with the arrival of Mr. Skillman who was sent over from England to study local conditions and to report on the possibilities of establishing this new industry in these Islands. He was followed in January 1943 by Mr. R. E. Hay. Seed Production was considered from all angles and the Seed Experts were of opinion that Malta is climatically the most favoured of all European Seed Producing Countries. It was also their opinion that a flourishing export trade with a limited range of vegetables seeds can be built up, provided that satisfactory control can be established. Our temperate winter gives advantage over most European Countries in that for some crops it is possible to sow a late crop in time to get seeds should the earlier crop fail to produce the contracted requirements. The brilliant sunshine during periods of ripening assures quick maturity of the seed with very high germination. It was further pointed out that the conditions in these Islands are even favourable to the production of Flower Seeds.

FIRST ATTEMPT.

The necessary preliminary arrangements having been concluded, the first attempt to constitute a satisfactory nucleus of a seed-producing industry was made towards the end of September 1943 when ten hundredweights of stock-seeds were sown on Government-owned land. These consisted of the following :—

CROP.	AREA.	CROP.	AREA.
Lettuce	22½ acres	Chicory	¼ acre
Tomato	7¼ acre	Peas	3 acres
Carrots	12½ acres	Endive	¼ acre
Leek	10 acres	Spinach	1 acre
Egg Plant	¼ acre	Onions	10½ acres
Sage	½ acre	Celeriac	1 acre
Thyme	½ acre	Indian Corn	2 acres
Cucumbers	2½ acres	Sweet Corn	2 acres

In addition small experimental plots of the following flowers were also sown :—

Acroclinium,
Ageratum (five varieties),
Anemone du Caen (Giant),
Asters (twelve varieties),
Begonia,
Calceolaria rugosa,
Calliopsis (three varieties),
Canterbury Bells,
Celosia,
Chrysanthemum annual (four varieties),
Cistus Helianthemum,
Convolvulus (two varieties),
Cosmea,
Dianthus (four varieties),
Erigeron,
Eschscholtzia (three varieties),
Gaillardia (three varieties),
Gypsophila (three varieties),
Heliotrope,
Adonis Flos,
Anthirrinhum,
Arctotis,
Aubretia,
Bellis perennis (four varieties)
Calendula (five varieties),
Candytuft (three varieties),
Carnations (Annual varieties),
Cheiranthus Allionii,
Chrysanthemum perennial,
Clarkia (five varieties),
Cornflower (four varieties),
Dahlia (three varieties),
Dimorphoteca (two varieties),
Echium,
Felicia Belgeriana,
Godetia (five varieties),
Helianthus,
Hollyhock,

Ipomea,
Lavatera,
Linaria (two varieties),
Matthiola bicornis,
Mesembryanthemum,
Myosotis,
Nemesia (two varieties),
Nigella (four varieties),
Papavar (three varieties),
Phacelia,
Pyrethrum,
Saponaria,
Schizanthus,
Statice (six varieties),
Sweet Sultan (four varieties),
Tagetes,
Venidium,
Viscaria,
Wallflower (four varieties),
Larkspur (six varieties),
Linaria (two varieties),
Lobelia (four varieties),
Marigold,
Mignonette (three varieties),
Nasturtium (two varieties),
Nicotiana (three varieties),
Pansy (three varieties),
Petunia (three varieties),
Portulaca (three varieties),
Sapliglossis,
Scabious (five varieties),
Silene,
Stocks (six varieties),
Sweet William,
Ursinia,
Verbena,
Viola (two varieties),
Zinnia.

In 1943 there was no seed cleaning machinery beyond a few locally made sieves of punctured hide. Two sets of wire hand sieves and one "Bryan Corcoran Machine" arrived in April 1944 and were very helpful.

A machine to extract seeds from tomato fruit and leave the pulp in a usable state, was purchased locally in 1944 and is still working satisfactorily.

In order that Malta may win the confidence of English importers of seed, a satisfactory seed-testing station was established at the Government Farm, Ghammieri and a nursery at Attard.

FIRST ATTEMPTS DISAPPOINTING.

The first attempts of vegetable and flower seed growing were in many cases disappointing, owing to various causes which may be summarized as follows:—

a) Stock-seeds for reproduction arrived late.

b) Certain crops, such as celery, were found to be more susceptible to disease when grown from foreign seeds.

c) In some cases the stock-seed supplied to us was of poor growth and in a number of cases the quantity of seed was insufficient to plant the contracted area.

d) Labour and seasonal difficulties at planting time, especially with lettuce and tomatoes held up the necessary work with the result that only the earliest planted acreages gave good results.

Obviously it would be necessary in the future to work up good strains of some vegetables from local stocks. With care and attention we can turn out strains of superior quality and disease resisting.

It should be appreciated that Seed Production is a highly specialized industry and is closely associated with plant breeding. Numerous problems arise in connection with seed production that are of little importance in other branches of Agriculture. Growers must do all in their power to eliminate seed-borne diseases. Fumigation must also be practiced for the control of weavils and other seed-carried insects.

SEEDS FOR MEDITERRANEAN COUNTRIES.

Early in 1944 the Department of Agriculture was asked what seeds it could grow to supply for relief purposes in Greece and Yugoslavia and it was suggested, but never finally confirmed, that the cultivation should be put in hand of one ton of spinach seed, $\frac{1}{2}$ ton beetroot and $\frac{1}{2}$ ton lettuce.

Although the order was never confirmed the crops were nevertheless grown, along with a number of other seeds on an area of approximately 15 acres. Most of these seeds were subsequently shipped to Tripolitania, Germany and to M.E.F. and Aden.

1944 CONTRACTS.

The vegetable seeds contracts secured in 1944 were the following :—

CROP	AREA	CROP	AREA.
Lettuce	27 acres	Onions	14½ acres
Tomatoes	6 acres	Cucumbers	1¼ acres
Carrots	7½ acres	Chicory	2½ acres
Leeks	22 acres	Celery	2½ acres

GROWERS INTEREST.

By 1944, farmers were taking to the idea of seed growing with increasing interest, and upwards of 150 farmers were growing small lots of seed under contract. They were reacting favourably and, on the whole, were producing good seed, reasonably clean and were giving care and attention to the crops. Naturally they have a pretty shrewd, empirical knowledge of the rudiments of seed growing because they are in the habit of saving seed of many crops for their own use.

SEED EXPERTS OPINION.

From its inception in 1942, it was the opinion of the seed experts that a Malta Seed Company operating with the moral support of the Government and the Department of Agriculture would be more attractive to merchants in the United Kingdom than a seed industry operated directly by Government. With this aim in view I relieved Mr. R. E. Hay as Seed Production Officer on the 16th August, 1945, after his return from United Kingdom with the following contracts :—

1945 CONTRACTS.

CROP.	AREA.	CROP.	AREA.
Lettuce	16½ acres	Leeks	11½ acres
Tomato	10 acres	Onions	7½ acres
Carrots	19 acres	Sage	1 acre
Chicory	2 acres		

PROGRESS OF INDUSTRY.

Immediately I took over, I examined the progress of the Seed Production Industry from all angles and I arrived at the conclusion that the stage had been reached where a change of policy had become both necessary and advisable. Most of the seeds were in the past grown on Government lands. The Marsa which constituted the greater part of these lands was being returned to the United Services Sports Club. It was therefore necessary to encourage private enterprise to take over as soon as possible, at the same time reducing Government financial responsibility by giving most of the contracts out to farmers, thereby restricting our activities to the supervision of growing crops, rogueing, testing, cleaning and dispatching of the seeds. This change of policy was, in fact, the first step towards the achievement of the main purpose for which the Seed Industry project was evolved.

SLOW PROGRESS UNAVOIDABLE.

In view of the high cost of vegetables, progress in vegetable-seed production has been necessarily slow, but the path which has been beaten since the new venture was started is in itself a great tribute to the work performed by my predecessors.

SEED CONTRACTS FOR 1947.

In order to book seed contracts for 1947 and to ascertain the general feeling that existed among the Seed merchants of the United Kingdom for this new industry, I proceed to England by air on May 23rd and returned to Malta on the 11th June, 1946.

During my brief stay in England I arranged appointments with our contracting

firms with whom I subsequently had very cordial talks. I had interviews also with the Crown Agents for the Colonies, the Seed Branch of the Ministry of Agriculture and Fisheries, and with the Economic Division of the Colonial Office. The following are the seed contracts secured during my visit to the United Kingdom :—

CONTRACTS 1946/47.

Vegetables.

Lettuce	50 acres	Onion	44 acres
Tomatoes	20 acres	Cucumbers	4 acres
Carrots	40 acres	Sage	2 acres
Leeks	10 acres	Celery	½ acre
Broad Beans	4 acres		

Flowers (Several kinds).

Autumn Sown	14 acres	Spring Sown	9 acres

Over two hundred and fifty farmers are booked to grow these contracts.

VISIT OF TWO ENGLISH SEED DIRECTORS.

Following my visit to England, Mr. Frank Hall, Director of Messrs. Harrison & Sons of Leicester and Mr. L. F. Squire, Director of Messrs. Bees Limited, Liverpool, visited Malta. Mr. F. Hall arrived by Air from England on the 25th June and proceeded to Cyprus on the 30th June. Mr. L. F. Squire arrived from Cyprus on the 1st July and left for England on the 4th July. During their stay they saw the Farm, most of our country, our method of seed cleaning and inspected all the seeds in stock. They expressed satisfaction at what they had seen but emphasized the fact that more cleaning machines were essential. These Directors were favourably impressed notwithstanding the fact that they have seen Maltese Agriculture during one of the worst seasons recorded in the history of these Islands.

FLOWER SEEDS EXPORT.

Flower seeds import into the United Kingdom was banned prior to 1945. While it was the wish of the United Kingdom Seed Trade to be allowed to import an appreciable quantity of various kinds of flower seeds, consideration had to be given to the interests of seed growers of Great Britain, now organized in the Federation of Seed Growers' Association within the National Farmers' Union (U.K.).

In September 1946, the Ministry of Agriculture and Fisheries, allowed the importation under licence from a few specified Countries including Malta, of thirty four kinds of flower seeds on condition that these would reach United Kingdom on or before the 31st December 1946.

Towards the end of June 1947, Messrs. R. K. W. Kershaw, John Harrison and J. Rhodes came to Malta to conclude the formation of Malta Seed Limited, to take over the industry from Government. This Company was formed by private agreement as published in the Government Gazette of the 20th September 1947.

The undersigned relinquished his Government duties, and the Section continued its winding up under the supervision of Mr. S. J. Zammit, the Assistant Horticultural Officer, under whose direction seeds contracted for 1946 continued to be cleaned and exported to United Kingdom. The harvest 1946/47 crops were poor owing to the persistent drought. By the end of December all assets were liquidated.

Malta Seeds Limited have purchased from Government all seed cleaning machines and equipment at a price assessed by the Public Works Department.

(Sd.) C. Zammit Marmara.

APPENDIX 12.

Report by the Officer I/C Fertile Soil Ordinance during the calendar years 1939-1946.

During the period under review the following building notices were received.

Year	No. of building notices	Soil saved in cubic yards
1939	445	58,366
1940	—	—
1941	—	—
1942	—	—
1943	47	3,131
1944	140	9,651
1945	106	7,987
1946	363	47,200

This soil was utilized for the (a) formation of back gardens (b) reclamation of lands at the back of building sites (c) formation of tree gardens (d) reclamation of different fields (e) reclamation of waste land adjoining the Government Farm, and reclamation of privately owned waste land.

Prior to the outbreak of hostilities this Branch was required to provide soil for filling sand bags for defence purposes. In common with many other works, building enterprise came to a standstill. During the period 1940-1942 only buildings strictly required for defence purposes were erected and in the prevailing circumstances the Fertile Soil Preservation Ordinance could not be enforced. In 1943 the building industry was resumed and a circular was sent to every civil engineer drawing his attention to the provision of the Ordinance which henceforth was to be enforced very strictly.

Before the war the public had become familiar with the working of this ordinance to the extent that private individuals called very frequently at this office applying for supplies of fertile soil for reclaiming their waste land or for adding to that already existing in their orchards and gardens, this tendency is now being gradually resumed. Unfortunately, however, as the ordinance, of necessity, had to be held in abeyance owing to the war years, this Section had to issue frequent warnings to all concerned and took legal action where necessary in order to ensure compliance with this law.

In comparison with the pre-war period, the number of building permits issued during 1943-1946 was negligible as the Building Control Board gave priority to repairs and reconstruction of buildings demolished through enemy action. However it is anticipated that such restrictions are only temporary and as soon as building material becomes available and more skilled labourers are released from the Services, the building industry will resume its pre-war activities.

(Sd.) A. Azzopardi,

Officer i/c Fertile Soil.

APPENDIX 13.

Report by the Officer I/C Fertile Soil during the calendar year 1947.

During the year 1947, the number of building notices received was 837. The total volume of soil removed from building sites amounted to 57,694 cubic yards as shown in Appendix "A". 223 applications are still pending and soil will be removed if any, as soon as building operations are taken in hand. In many instances, the soil was utilized for the formation of back gardens but extensive reclamation of waste land was also carried out chiefly at Għammieri Government Farm, Marsa; at San Martin, St Paul's Bay and at Ħaġar Qim, Qrendi. The cooperation of the Services in the preservation of soil is much appreciated; all reclamation at Ħaġar Qim was done by them.

Occasionally building operations are started, without notifying this Branch. A timely warning as a rule gives the desired results but those few who persist in disregarding the regulations are summoned in Court. Fines were inflicted on owners of sites, mastermasons and architects responsible for the erection of buildings as the three categories are individually responsible for the strict observance of the provisions of the Fertile Soil Ordinance.

With the increased cost of labour and transport, attempts to evade regulations are also on the increase. Consideration should be given to the possibility of Government providing transport at an agreed hire charge which, while helping control, would at the same time offer an opportunity to owners to obtain transport at a cheaper rate than that prevailing at present.

Soil is also lost through erosion: occasionally a heavy downpour occurs when a few inches of rain may fall in a short time. To interrupt the flow of soil laden water to the sea it is suggested that dams be constructed across the lower side of water courses to stop soil which otherwise will find its way to the sea. Also in several instances when fallen retaining wall of terraced plots are not reconstructed, considerable quantity of soil is lost, being carried away by surface water. Owners of terraced land should be compelled by law to rebuild demolished walls in the interest of soil preservation.

(Sd.) A. Azzopardi,

Officer i/c Fertile Soil.

APPENDIX A.

FERTILE SOIL — 1947.

Remarks :— A — sites where soil existed and was removed;
B — sites where no soil existed and,
C — cases still pending.

Localities	No. of appl.	A	B	C	C. Yds.
MALTA					
Attard	5	4	1	—	535
Balzan	14	11	—	3	2895
Birgu	—	—	—	—	—
Birkirkara	58	39	9	10	1930
Birżebbuġa	28	10	9	9	690
Bormla	—	—	—	—	—
Dingli	14	8	1	5	577
Floriana	—	—	—	—	—
Għargħur	5	3	1	1	68
Għaxaq	8	4	1	3	220
Gudia	3	1	1	1	110
Gżira	17	8	6	3	1705
Hamrun	27	13	4	10	1425
Isla	—	—	—	—	—
Kalkara	3	—	2	1	—
Kirkop	4	2	1	1	45
Lija	7	5	1	1	670
Luqa	14	12	2	—	995
Marsa	6	4	—	2	365
Marsaskala	3	1	—	2	60
Marsaxlokk	1	1	—	—	50
Mellieħa	36	2	28	6	1310
Mġarr	41	9	19	13	360
Mosta	22	13	4	5	1300
Mqabba	9	6	—	3	736
Msida & Pietà	12	4	4	4	210
Naxxar	7	4	—	3	235
Pawla	35	14	15	6	1410
Qormi	31	18	5	8	1431
Qrendi	4	3	—	1	11145
Rabat	38	18	11	10	690
Safi	3	1	2	—	40
Siġġiewi	14	9	1	4	780
Sliema	4	2	1	1	60
St. Julian's	24	9	7	8	985
St. Paul's Bay	49	19	13	17	5440
St. Vennera	5	4	—	1	375
Tarxien	14	5	8	1	346
Valletta	—	—	—	—	—
Żabbar	24	13	6	5	1310
Żebbuġ	5	5	—	—	4025
Żejtun	21	16	1	4	2580
Żurrieq	12	2	6	4	350
Totals Malta	627	302	170	156	50168
GOZO					
Għajnsielem	5	2	—	3	481
Għarb	14	8	1	5	276
Għasri	2	1	—	1	48
Kerċem	9	5	—	4	516
Marsalforn	4	4	—	—	737
Nadur	62	37	4	21	1052
San Lawrenż	6	2	1	3	145
Sannat & Monxar	20	13	2	5	635
Qala	19	14	1	4	837
Victoria	13	9	—	4	949
Xewkija	22	15	—	7	1262
Xagħra	25	14	2	9	558
Żebbuġ	9	9	—	—	320
Totals Gozo	210	133	11	66	7816
Grand totals	837	435	181	222	57984

eb.

APPENDIX 14.

Report by the Officer I/C Census and Survey for the year 1942-1946.

During the siege, as a first step to control local agricultural produce farmers were requested to register their land stating area and "contrada" (locality); in many instances such registration was incomplete as with increasing prices of crops, farmers were more tempted to keep land unregistered and therefore uncontrolled.

To exercise stricter control on local crops a second census was held. Before starting registration all plots, about 120,000, were numbered and measured by planimeter, on Malta survey sheets. Every farmer had his land registered not only according to "contrada", but also with reference to plot number and sheet number. Moreover the area and description of each plot was recorded. The farmer's registration card number and the area of each plot were inserted in the survey sheets and this made cross checking with the census sheets easier.

The registration of land in Gozo could not be done on Survey Sheets as in Malta, owing to the fact that only main roads, valleys and villages were plotted on Gozo Survey Sheets. In February 1944, it was decided to have an aerial survey of Gozo; accordingly 65 photomaps were prepared and these were corrected and adapted by the Public Works Department, Gozo, to the 48 Gozo Survey Sheets under the supervision of the Survey Office staff. Such survey sheets were treated on the same principles adopted in Malta and the same procedure was followed. However, although the map survey of Gozo was complete it was not possible, for reasons beyond the control of the department, to correlate these maps by actual registration of farmers and by field inspections, with the information collected during the 1944 Census.

(Sd.) A. Azzopardi,

Officer i/c Census and Survey.

APPENDIX 15.

Report by the Officer I/C Census and Survey for the year 1946-1947.

Details relating to farmers and their families, the grouping of farms according to area, the total area of registered land, the area and/or number of the principal trees and ownership of land are shown in Appendices "A", "B", "C", "D", "E".

It will be observed that the largest farming district as regards population is Rabat followed by Siġġiewi, Mosta and Mellieħa, while the smallest districts are Pawla, Gżira and Sliema.

Siġġiewi heads the list of wholetime farmers followed by Żebbuġ and Rabat while Sliema has only one. The part time farmers are more numerous at Żejtun and Rabat; 41% of the farmers registered are whole time farmers and 59% part time.

The highest percentage of illiterate farmers is at Żurrieq and that of literate farmers is highest at Mellieħa with 54% followed by Attard, Balzan and Lija with 50%. Of the total number of farmers registered 74% are illiterate. Under the heading "farmers without children" are included also bachelor sons of farmers who have been registered as farmers separately; the number of families with three children is the highest, followed by those having one child only.

The greatest number of farms have an area between 2½ tumoli to 5, followed by farmers with an area of 1 to 1½ tumoli. Farmers working such a small area of land may be generally considered as part timers, with the exception of those areas which are under irrigation where is possible for farmers to be fully engaged in the same manner as those cultivating over 15 tumoli of land. There are 45 farms ranging in area between 60 to 70 tumoli, while only 40 farms are over 70 tumoli. For the purpose of this Survey a farm has been defined as the actual area of land cultivated by registered farmers in one or more localities.

The total registered area is 132,391 tumoli, the Siġġiewi district being the largest followed by the Rabat, Mellieħa and Mosta districts, Mellieħa has the highest area under irrigation closely followed by St Paul's Bay.

The district with the greatest number of trees is Rabat, with Siġġiewi Second. The vine predominates over all other trees followed by the prickly pear and carob trees which thrive well under local climatic conditions.

The Civil Government owns 16.04% of the land of which 3.41% is waste land; the War Department owns 1.05% of which 0.29% is waste; the Church together with Pious Institutions has 20.96% of which 2.47% is barren land. In many instances it is not possible to differentiate between property owned by the Church and by Pious Institutions. The ownership of the balance of land has been registered in the name of farmer-owners and of private non-farmer owner in the following proportion:

Farmer-owner 9.76% of which 1% is waste land.

Private non-farmer-owner 52.19% of which 6.33% is waste land.

Mellieħa is the district with the most extensive area of rocky land chiefly Government owned, followed by Mġarr and Siġġiewi, the waste land of the latter belongs mostly to private owners. Farmer owners have the smallest area of waste land. Farmers have more incentive to ameliorate land when it is their own property. It is considered that Government should encourage the sale of its waste land to those afrmers who are willing to reclaim it, to the benefit of the country's economy.

From this Survey it can be seen to what extent, land has been split up. This occurs chiefly with land owned by the Government, with privately owned irrigated

land and with most of the land in Gozo. The practice of dividing among all heirs, each plot, irrispective of its size should be discontinued and the enactment of legislation to prevent splitting of dry farmed plots having an area of one tumolo or less, would be very appropriate as the existing system of sub-division of land reacts unfavourably on production.

The Survey Office endeavours to keep all records up-to-date by farmers notifying all changes in tenure.

During the year under review conditions were still unfavourable for the continuation of survey work in Gozo. In Malta, 439 farmers have their case still pending.

The Census and Agricultural Survey have been found most useful for various official purposes.

(Sd.) A. Azzopardi,

Officer i/c Census and Survey.

APPENDIX "A"

NUMBER OF FARMERS.

District	Consecutive Number	FRC No.	Whole Time	Part time		Literate	Illiterate
				Employed	Independent Occupation		
1. Attard	111	115	27	27	30	44	64
2. Balzan	81	90	16	28	18	50	28
3. Birkirkara	434	486	144	106	167	155	268
4. Birżebbuġa	150	140	74	30	17	10	111
5. Dingli	221	223	116	51	40	50	157
6. Għaxaq	260	299	118	58	67	61	182
7. Ghaxaq	210	220	92	59	33	39	145
8. Gudja	191	210	81	64	43	64	124
9. Gżira	26	30	9	3	10	4	18
10. Hamrun	85	98	10	16	36	26	36
11. Kalkara	43	41	15	13	11	11	28
12. Kirkop	152	161	38	40	35	9	104
13. Lija	111	122	38	25	43	54	54
14. Luqa	278	290	71	121	68	85	175
15. Marsa	73	92	14	25	30	24	47
16. Marsaskala	40	43	27	6	7	7	33
17. Marsaxlokk	51	50	35	5	11	14	37
18. Msida	100	109	17	17	45	23	56
19. Mellieħa	636	653	271	131	140	296	246
20. Mġarr	341	351	222	36	34	71	221
21. Mosta	620	665	255	125	193	103	470
22. Mqabba	221	235	33	95	56	38	146
23. Naxxar	286	311	142	69	70	53	229
24. Paola	23	24	6	6	4	9	8
25. Qormi	334	401	141	78	94	75	238
26. Qrendi	278	304	86	84	79	16	233
27. Rabat	939	967	259	136	179	186	389
28. Safi	95	99	44	28	15	5	82
29. St Julian's	168	180	56	35	68	47	112
30. St Paul's Bay	370	387	233	21	67	119	202
31. Sta Vennera...	40	47	16	5	16	13	24
32. Siġġiewi	650	721	369	137	138	162	482
33. Sliema/Valletta	26	27	1	4	10	9	6
34. Tarxien	187	199	77	61	37	40	135
35. Żabbar	378	381	160	137	69	92	274
36. Żebbuġ	479	492	283	85	109	68	409
37. Żejtun	562	623	228	211	119	147	411
38. Żurrieq	543	544	174	148	146	37	431
Total	9,783	10,430	3,998	2,326	2,354	2,376	6,415

APPENDIX "A" — *(continued)*

NUMBER OF CHILDREN OF FARMERS.

District	NIL	1	2	3	4	5	6	7	8	9	10	Over 10
1. Attard	53	13	8	8	9	8	4	3	2	—	—	—
2. Balzan	42	6	7	5	5	4	5	2	1	1	—	—
3. Birkirkara	157	49	42	48	42	32	15	23	7	6	1	1
4. Birżebbuġa	36	11	15	14	17	10	10	5	2	1	—	—
5. Dingli	60	25	24	30	26	16	6	8	7	2	2	1
6. Għargħur	109	15	28	24	29	17	11	4	6	—	—	—
7. Għaxaq	53	37	25	24	18	15	6	4	—	1	1	—
8. Gudja	65	34	26	24	15	10	10	3	1	—	—	—
9. Gżira	8	1	4	2	3	—	2	—	—	1	—	1
10. Hamrun	25	8	7	7	5	4	2	2	2	—	—	—
11. Kalkara	9	11	6	1	7	1	3	—	—	1	—	—
12. Kirkop	42	15	14	8	9	9	6	8	1	1	—	—
13. Lija	57	10	7	9	13	3	3	1	3	2	—	—
14. Luqa	84	42	37	26	28	23	10	6	2	2	—	—
15. Marsa	22	8	10	4	6	7	4	4	3	3	—	—
16. Marsaskala	15	3	7	4	5	4	1	1	—	—	—	—
17. Marsaxlokk	18	2	3	8	5	4	6	2	2	1	—	—
18. Msida	31	7	9	7	10	4	6	3	—	1	1	—
19. Mellieħa	168	49	69	86	59	37	36	13	12	9	2	2
20. Mġarr	89	21	32	34	31	25	21	20	12	4	2	1
21. Mosta	204	73	49	78	67	47	20	20	9	5	1	—
22. Mqabba	64	24	16	29	17	11	8	5	6	2	2	—
23. Naxxar	98	33	35	31	28	19	18	8	7	1	3	1
24. Paola	5	2	1	3	3	1	1	1	—	—	—	—
25. Qormi	96	35	27	37	35	33	17	11	10	8	3	1
26. Qrendi	90	29	32	32	27	14	11	5	5	2	1	1
27. Rabat	191	90	60	64	59	47	27	12	15	8	—	2
28. Safi	40	7	7	13	3	6	7	2	1	1	—	—
29. St Julian's	64	17	15	16	16	14	7	3	2	3	2	—
30. St Paul's Bay ...	123	32	28	36	41	19	19	13	6	3	—	1
31. Sta Vennera ...	11	5	4	5	1	3	4	1	1	1	1	—
32. Siġġiewi	205	90	98	85	75	43	27	15	3	2	1	—
33. Sliema/Valletta ...	4	2	2	3	1	1	2	—	—	—	—	—
34. Tarxien	59	26	20	25	19	16	3	4	1	2	—	—
35. Żabbar	114	48	46	50	45	19	13	13	12	4	2	—
36. Żebbuġ	174	48	57	53	49	38	28	18	4	5	2	1
37. Żejtun	194	57	80	79	46	44	26	15	11	3	1	2
38. Żurrieq	174	56	64	45	53	32	21	14	6	3	—	—
Total ...	3,053	1,041	1,021	1,057	927	640	426	272	162	89	28	15

APPENDIX "B"

AREA CULTIVATED.

District	½T to 1T	1T to 2½T	2½T to 5T	5T to 7½T	7½T to 10T	10T to 15T	15T to 20T
1. Attard	7	25	19	8	9	17	6
2. Baiżan	10	17	13	12	8	9	4
3. Birkirkara	47	78	73	42	36	53	30
4. Birżebbuġa	3	7	13	14	10	16	18
5. Dingli	4	24	32	17	16	30	27
6. Għargħur	10	23	38	32	24	36	28
7. Għaxaq	4	11	37	25	15	25	27
8. Gudja	6	28	33	20	17	27	16
9. Gżira	1	2	3	4	2	4	3
10. Hamrun	8	13	11	10	11	7	—
11. Kalkara	1	7	13	1	2	5	5
12. Kirkop	5	10	29	13	17	16	14
13. Lija	11	23	13	9	13	9	14
14. Luqa	10	44	61	47	27	35	10
15. Marsa	13	16	15	6	8	2	4
16. Marsaskala	—	1	5	3	4	3	6
17. Marsaxlokk	2	4	5	—	2	11	3
18. Msida	6	16	18	11	9	8	6
19. Mellieħa	37	50	85	58	46	98	67
20. Mġarr	5	15	17	14	21	27	38
21. Mosta	54	69	96	46	42	62	48
22. Mqabba	9	36	54	29	22	14	10
23. Naxxar	15	30	36	30	21	30	26
24. Paola	1	2	5	1	1	4	—
25. Qormi	15	42	51	33	32	51	35
26. Qrendi	8	48	55	35	19	29	28
27. Rabat	31	81	82	65	59	56	55
28. Safi	5	12	13	5	8	9	6
29. St Julian's	12	20	38	23	8	22	12
30. St Paul's Bay	15	13	20	14	26	52	55
31. Sta Vennera...	3	4	3	5	6	3	4
32. Siġġiewi	28	65	86	62	37	73	65
33. Sliema/Valletta	2	5	2	3	2	1	—
34. Tarxien	9	20	23	30	12	43	14
35. Żabbar	16	52	63	34	36	36	37
36. Żebbuġ	22	47	59	34	34	63	62
37. Żejtun	32	95	78	66	35	72	47
38. Żurrieq	35	78	81	58	40	70	31
Total	502	1,133	1,378	919	737	1,128	861

APPENDIX "B" — (*continued*)

AREA CULTIVATED. — (*continued*)

District	20T to 25T	25T to 30	30T to 40T	40T to 50T	50T to 60T	60T to 70T	Over 70T
1. Attard	4	7	2	3	—	1	—
2. Balzan	2	1	2	—	—	—	—
3. Birkirkara	23	15	19	5	1	1	—
4. Birżebbuġa	13	13	12	2	—	—	—
5. Dingli	15	14	12	11	3	2	—
6. Għargħur	19	14	10	5	2	1	1
7. Għaxaq	15	8	9	7	1	—	—
8. Gudja	12	8	10	7	1	1	—
9. Gżira	—	2	—	1	—	—	—
10. Hamrun	1	1	—	—	—	—	—
11. Kalkara	—	—	3	2	—	—	—
12. Kirkop	6	1	2	—	—	—	—
13. Lija	7	4	5	—	—	—	—
14. Luqa	16	4	4	—	1	—	1
15. Marsa	3	—	1	3	—	—	—
16. Marsaskala	7	1	—	5	1	3	1
17. Marsaxlokk	6	2	9	3	3	—	1
18. Msida	4	—	1	—	—	—	—
19. Mellieħa	36	27	27	8	3	—	—
20. Mġarr	43	35	38	19	12	5	3
21. Mosta	48	27	34	35	6	2	4
22. Mqabba	4	3	2	1	—	—	—
23. Naxxar	30	17	23	13	6	2	3
24. Paola	—	1	1	—	—	—	1
25. Qormi	15	19	10	8	1	—	1
26. Qrendi	11	5	6	3	—	—	2
27. Rabat	36	39	40	14	7	5	5
28. Safi	11	9	5	3	—	1	—
29. St Julian's	13	7	3	1	—	—	—
30. St Paul's Bay	36	29	33	14	9	3	1
31. Sta Vennera...	3	2	3	—	1	—	—
32. Siġġiewi	50	41	71	34	18	9	5
33. Sliema/Valletta	—	—	—	—	—	—	—
34. Tarxien	11	3	5	3	1	1	—
35. Żabbar	20	17	26	14	6	4	5
36. Żebbuġ	55	22	49	16	9	2	3
37. Żejtun	36	36	33	13	11	2	2
38. Żurrieq	27	15	22	5	6	—	—
Total	638	449	532	258	109	45	40

APPENDIX "C"

REGISTERED AREA.

District	Total Area			Dry			Irrigated			Semi Irrigated			Trees			Waste		
	T.	S.	K.	T.	S.	K.	T.	S.	K.	T.	S.	K.	T.	S.	K.	T.	S.	K.
1. Attard	1,181	5	2	1,029	2	4	22	4	8	11	0	0	48	5	8	69	4	2
2. Balzan	563	4	9	420	5	1	16	1	5	39	5	7	65	1	3	21	3	3
3. Birkirkara	4,504	3	5	3,500	1	3	83	5	1	80	2	0	376	3	7	463	3	4
4. Birżebbuġa	2,129	3	5	1,868	2	0	1	0	0	1	0	0	15	5	6	243	1	9
5. Dingli	3,985	0	8	2,635	3	5	132	5	5	105	1	4	170	0	2	941	2	2
6. Għargħur	3,708	2	5	3,092	1	4	1	1	0	6	5	0	53	5	6	554	1	5
7. Għaxaq	2,747	5	7	2,296	1	6	81	4	6	0	0	0	62	4	2	307	1	3
8. Gudja	2,593	3	4	2,286	2	2	0	0	0	0	0	0	33	0	3	274	0	9
9. Gżira	270	1	9	235	5	7	0	4	0	0	0	0	26	3	8	7	0	4
10. Hamrun	377	4	3	301	1	0	11	5	5	6	5	1	40	5	4	16	5	3
11. Kalkara	470	4	4	389	5	9	0	5	2	3	3	9	20	4	9	55	2	5
12. Kirkop	1,087	1	7	1,010	5	0	0	0	0	1	0	0	1	4	4	73	4	3
13. Lija	1,064	1	9	885	3	9	9	2	9	66	2	6	80	2	4	22	2	1
14. Luqa	2,488	1	4	2,079	5	1	47	3	4	0	0	0	51	3	9	309	1	0
15 Marsa	547	0	3	485	2	4	10	0	0	0	0	0	36	3	4	15	0	5
16. Marsaskala	1,051	5	9	830	4	5	10	4	3	52	2	9	49	2	4	108	3	8
17. Marsaxlokk	1,232	0	1	1,057	4	2	3	0	0	3	5	2	47	4	6	119	4	1
18. Msida	590	4	1	469	0	2	2	3	6	13	4	6	85	5	4	19	2	3
19. Mellieħa	9,841	4	9	5,361	0	7	929	0	7	18	0	3	234	4	1	2,398	5	1
20. Mġarr	7,891	2	0	5,267	2	3	321	1	8	12	3	0	577	5	8	1,712	1	1
21. Mosta	9,245	2	2	7,477	5	7	44	0	0	66	4	9	457	4	5	1,198	5	1
22. Mqabba	1,577	2	0	1,210	1	4	0	0	0	1	3	0	23	1	2	142	2	4
23. Naxxar	5,405	0	3	4,378	4	2	29	2	7	10	0	8	129	5	2	856	5	4
24. Paola	249	3	6	203	3	1	8	0	0	6	4	2	16	5	1	14	3	2
25. Qormi	3,868	0	4	2,847	2	0	511	5	4	114	0	6	208	1	3	186	3	1
26. Qrendi	2,957	5	4	2,289	3	5	0	0	0	0	4	0	55	2	2	612	1	7
27. Rabat	9 518	0	1	6,296	4	9	336	1	3	209	0	0	320	4	8	1,355	1	1
28. Safi	1,267	0	3	1,206	1	5	0	0	0	3	1	2	18	4	3	138	5	3
29. St Julian's	1,795	2	2	1,410	1	2	14	0	7	3	1	2	89	5	6	277	5	5
30. St Paul's Bay ...	7,082	5	1	4,602	4	9	901	5	8	16	4	9	365	3	1	1,195	4	4
31. Sta Vennera ...	522	3	8	282	4	8	27	2	7	158	1	7	27	0	2	27	0	4
32. Siġġiewi	12,620	5	9	10,059	3	1	100	3	0	0	5	5	857	5	7	1,602	0	6
33. Sliema/Valletta ...	83	3	9	52	1	5	0	1	5	3	2	0	10	3	7	17	1	2
34. Tarxien	1,971	1	4	1,868	5	3	3	5	0	0	0	0	58	4	0	39	5	1
35. Zabbar	5,567	0	9	4,704	5	6	358	1	1	35	4	0	174	2	9	293	5	3
36. Żebbuġ	7,818	3	6	6,984	4	9	46	5	5	6	0	7	498	4	5	282	0	0
37. Żejtun	7,695	5	3	6,755	0	0	244	2	7	37	2	9	227	2	3	431	3	4
38. Żurrieq	4,917	1	3	4,280	3	6	9	3	8	16	4	7	47	1	8	562	5	4
Total ...	132,392	2	1	102,416	1	6	4,323	5	1	1,113	4	0	6,669	1	6	17,869	1	8

APPENDIX "D"

TREES.

District	Citrus				Other Fruit				Carobs				Bickly Pears				Vines				Figs			
	T.	S.	K.	No.	T.	S.	K.	No.	T.	S.	K.	No.	T.	S.	K.	No.	T.	S.	K.	No.	T.	S.	K.	No.
1. Attard	25	1	2	54	1	3	4	464	5	2	6	81	11	1	2	375	3	0	6	912	2	2	8	235
2. Balzan	40	4	9	102	8	2	7	440	5	3	2	66	6	1	7	260	1	5	5	896	2	1	3	161
3. Birkirkara	27	1	4	421	17	2	0	2,347	227	1	8	443	79	2	2	1,766	9	2	9	5,714	15	5	4	1,133
4. Birżebbuġa	0	3	0	40	1	4	8	33	4	0	4	285	4	0	2	1,177	5	3	2	2,858	0	0	0	544
5. Dingli	1	1	9	399	116	1	0	5,542	13	0	6	544	6	5	1	1,788	49	4	9	12,424	0	0	5	2,565
6. Għargħur	1	5	2	182	3	4	5	471	32	2	8	1,404	2	2	3	1,964	13	1	4	3,388	0	1	4	1,450
7. Għaxaq	3	3	0	176	2	1	4	157	33	0	9	392	18	3	5	1,241	5	1	4	1,799	0	0	0	594
8. Gudja	0	2	0	83	0	0	0	305	18	0	4	843	6	5	2	1,346	7	4	7	6,824	0	0	0	662
9. Gżira	0	0	0	29	0	1	0	76	14	0	2	2	11	0	3	54	0	1	0	208	1	1	3	49
10. Hamrun	1	3	0	127	0	5	0	143	2	3	5	34	34	1	0	144	0	2	5	409	1	2	4	124
11. Kalkara	0	0	0	45	0	3	6	96	6	5	9	33	12	2	2	254	0	5	2	1,086	0	0	0	271
12. Kirkop	0	0	0	27	0	3	0	24	1	0	0	167	0	1	4	1,106	0	0	0	1,976	0	0	0	391
13. Lija	51	5	5	135	8	4	3	588	9	0	0	25	6	4	7	307	1	5	9	1,158	2	0	0	290
14. Luqa	1	2	8	190	1	4	7	467	9	0	2	1,253	21	4	6	2,060	17	3	6	4,467	0	0	0	897
15. Marsa	0	4	2	10	0	5	0	32	1	2	0	6	29	2	7	199	1	2	0	141	2	5	5	116
16. Marsaskala	1	0	0	55	0	4	3	29	33	1	5	36	13	2	8	465	0	4	0	2,410	0	1	8	343
17. Marsaxlokk	2	2	7	25	0	0	0	237	30	0	5	32	13	4	9	178	0	3	5	1,004	0	5	0	269
18. Msida	2	5	7	76	0	1	5	129	26	0	5	55	50	2	0	153	2	2	3	708	3	5	4	208
19. Mellieħa	0	0	0	410	7	3	0	1,468	1	5	0	3,057	7	3	0	2,702	213	0	1	5,235	9	0	0	7,093
20. Mġarr	0	0	0	431	76	3	9	2,541	6	1	0	1,541	27	1	5	2,268	507	2	8	984	6	0	6	3,953
21. Mosta	45	0	9	397	95	5	9	1,562	60	3	5	1,377	16	0	1	3,706	235	3	6	3,151	4	2	5	2,892
22. Mqabba	3	2	4	38	2	2	8	105	3	3	0	144	2	2	0	1,017	11	3	0	2,357	0	0	0	593
23. Naxxar	6	2	8	238	26	2	6	800	52	2	9	862	11	4	4	2,605	33	3	6	2,730	0	4	9	1,809
24. Paola	2	2	7	4	0	4	9	5	0	0	0	2	4	3	5	52	9	0	0	92	0	0	0	28
25. Qormi	41	2	3	461	7	3	1	1,322	86	2	2	112	58	5	1	1,333	6	5	5	2,921	7	1	1	633
26. Qrendi	2	1	6	150	0	2	3	386	21	3	8	297	1	0	5	1,204	30	3	0	10,894	0	0	0	664
27. Rabat	24	0	9	326	324	4	0	3,577	95	2	5	1,077	85	2	1	3,033	788	0	3	5,400	3	1	0	4,296
28. Safi	0	4	0	83	0	5	1	125	5	2	1	292	1	4	9	762	10	0	2	4,214	0	0	0	433
29. St Julian's	6	1	4	206	10	2	9	769	35	0	5	1,131	30	4	4	1,091	5	0	8	2,191	2	1	6	424
30. St Paul's Bay ...	0	0	0	419	8	1	0	1,037	73	1	7	1,856	16	4	6	2,495	296	3	0	2,691	4	5	6	2,896
31. Sta Vennera ...	5	1	3	74	1	3	9	272	4	3	5	12	11	1	0	112	2	2	0	331	2	0	5	141
32. Siġġiewi	111	0	2	546	246	0	0	6,300	183	0	2	610	7	2	1	4,348	350	5	8	13,022	1	4	8	2,311
33. Sliema/Valletta ...	6	0	6	25	0	1	5	23	1	3	0	20	2	0	2	30	0	0	0	233	0	4	4	36
34. Tarxien	1	3	0	114	0	0	0	641	2	3	0	95	51	2	7	1,858	2	5	3	3,933	0	2	0	594
35. Żabbar	16	1	4	339	2	4	2	699	67	2	8	142	65	0	9	1,901	16	2	1	10,162	6	3	5	1,783
36. Żebbuġ	44	1	4	241	61	5	5	2,548	192	1	3	363	2	1	9	4,854	213	5	3	6,249	0	0	0	2,009
37. Żejtun	14	3	2	344	2	5	4	504	122	3	4	706	72	1	0	4,202	10	3	5	9,518	4	3	8	2,552
38. Żurrieq	8	2	6	178	0	1	0	253	35	0	2	796	6	2	0	2,615	4	4	0	9,912	0	0	0	1,544
Total ...	502	1	2	7,200	1,043	1	2	36,517	1,523	0	6	20,193	810	5	9	57,025	2,871	0	5	244,602	87	3	1	46,986

APPENDIX "E"

OWNERSHIP OF LAND.

District	Civil Government						War Department						Church					
	Cultivated			Waste			Cultivated			Waste			Cultivated			Waste		
	T.	S.	K.	T.	S.	K.	T.	S.	K.	T.	S.	K.	T.	S.	K.	T.	S.	K.
1. Attard	32	1	1	21	2	8	0	0	0	0	0	0	222	5	6	3	1	7
2. Balzan	0	0	0	0	0	0	0	0	0	0	0	0	89	3	5	10	2	9
3. Birkirkara	68	3	2	8	1	0	13	0	2	0	2	7	646	3	1	141	4	3
4. Birżebbuġa	26	0	8	12	3	0	2	5	0	0	0	0	504	0	2	44	2	4
5. Dingli	252	5	1	67	1	6	0	0	0	0	0	0	562	4	8	132	1	1
6. Għargħur	121	5	7	42	3	8	222	2	8	83	1	1	650	5	0	91	1	2
7. Għaxaq	73	3	6	23	1	5	0	0	0	0	0	0	290	2	7	41	2	1
8. Gudja	20	2	0	4	2	5	0	0	0	0	0	0	387	3	9	36	3	8
9. Gżira	0	0	0	0	0	0	0	0	0	0	0	0	69	5	0	0	3	5
10. Hamrun	9	4	9	0	0	0	6	2	0	0	0	0	50	3	7	9	1	5
11. Kalkara	11	2	6	0	3	7	33	0	8	15	1	8	23	0	4	2	1	8
12. Kirkop	122	4	7	14	2	1	5	3	2	0	0	0	385	0	1	29	0	3
13. Lija	55	2	2	4	0	0	0	0	0	0	0	0	156	0	5	1	5	4
14. Luqa	231	0	2	145	1	0	30	5	9	2	2	3	559	5	6	75	4	0
15. Marsa	157	5	5	8	5	5	2	3	0	1	3	0	29	4	8	0	0	0
16. Marsaskala	23	5	6	0	0	0	11	1	5	0	0	0	70	5	9	10	1	2
17. Marsaxlokk	4	0	6	8	5	4	58	4	6	0	0	0	299	2	5	37	4	8
18. Msida	14	2	2	0	0	0	0	0	0	0	0	0	72	2	5	4	3	0
19. Mellieħa	5,054	4	1	2,789	0	5	80	5	7	45	0	0	951	2	5	328	0	1
20. Mġarr	1,219	3	8	190	2	5	17	0	5	8	3	0	290	4	8	55	4	8
21. Mosta	1,144	3	4	114	0	2	165	4	8	58	2	8	2,480	4	5	272	4	7
22. Mqabba	28	4	6	12	3	6	0	0	0	0	0	0	265	3	5	39	2	7
23. Naxxar	924	2	1	64	0	0	33	5	8	91	2	0	1,282	5	2	231	1	6
24. Paola	136	5	4	7	2	0	3	0	0	0	0	0	16	5	8	1	5	0
25. Qormi	224	3	6	26	4	8	0	0	0	0	0	0	440	3	6	41	0	8
26. Qrendi	156	4	1	10	2	1	0	0	0	0	0	0	895	4	1	509	3	0
27. Rabat	1,866	0	0	188	3	3	45	1	8	41	0	5	2,635	0	8	288	4	4
28. Safi	24	2	0	0	5	0	25	1	6	0	0	0	458	3	3	69	4	0
29. St Julian's	61	3	2	35	2	1	3	1	3	0	0	0	301	1	4	39	1	3
30. St Paul's Bay ...	1,170	4	5	474	5	3	14	0	0	0	3	0	985	5	5	61	3	8
31. Sta Vennera ...	0	0	0	0	0	0	0	0	0	0	0	0	70	1	1	4	1	6
32. Siġġiewi	1,631	2	3	148	2	0	74	0	0	4	4	0	3,097	4	7	279	5	0
33. Sliema/Valletta ...	0	0	0	0	0	0	0	0	0	0	0	0	13	4	9	0	5	9
34. Tarxien	208	1	4	4	2	6	1	3	0	0	1	5	210	0	7	0	2	5
35. Żabbar	234	0	1	0	0	0	66	4	7	11	3	1	584	4	6	48	5	6
36. Żebbuġ	241	5	9	14	0	4	5	4	0	0	0	0	2,283	2	6	173	5	7
37. Żejtun	953	3	6	55	0	5	104	3	1	11	2	8	1,214	3	2	58	3	2
38. Żurrieq	202	3	1	24	1	9	2	0	0	0	0	0	907	2	5	91	4	9
Total ...	16,710	5	2	4,522	0	7	1,029	5	3	375	3	6	24,459	3	1	3,270	1	6

APPENDIX "E" — (*continued*)

OWNERSHIP OF LAND. — (*continued*)

District	Private Property								
	Landlord						Farmer Owner					
	Cultivated			Waste			Cultivated			Waste		
	T.	S.	K.	T.	S.	K.	T.	S.	K.	T.	S.	K.
1. Attard	714	4	7	25	3	8	142	1	6	19	1	9
2. Balzan	384	2	2	9	5	8	68	1	9	1	0	6
3. Birkirkara	2,751	2	5	246	5	0	561	3	1	66	2	4
4. Birżebbuġa	1,194	3	1	160	1	8	158	4	5	26	0	7
5. Dingli	1,919	1	8	663	4	3	308	4	9	78	1	2
6. Għargħur	1,694	2	5	305	5	5	464	3	0	31	1	9
7. Għaxaq	1,836	4	7	202	1	1	239	5	4	40	2	6
8. Gudja	1,638	0	5	215	1	5	273	2	1	17	5	1
9. Gżira	171	4	5	6	2	9	21	4	0	0	0	0
10. Hamrun	250	2	0	7	3	8	43	4	4	0	0	0
11. Kalkara	329	0	5	35	2	0	18	3	6	1	5	2
12. Kirkop	420	2	9	28	2	9	79	4	5	1	5	0
13. Lija	697	3	8	12	2	5	132	5	3	4	0	2
14. Luqa	1,173	5	7	77	2	1	183	1	0	8	3	6
15. Marsa	331	4	4	4	4	0	10	0	1	0	0	0
16. Marsaskala	713	3	3	95	4	3	123	3	8	2	4	3
17. Marsaxlokk	715	0	4	72	5	9	34	5	9	0	0	0
18. Msida	454	3	9	13	3	4	29	5	2	1	1	9
19. Mellieħa	391	0	8	129	3	0	64	4	7	7	1	5
20. Mġarr	4,013	5	1	1,180	3	1	637	4	7	276	5	7
21. Mosta	3,421	3	0	608	2	3	833	5	4	145	1	1
22. Mqabba	704	3	3	52	2	6	236	0	2	37	5	5
23. Naxxar	1,800	2	0	366	3	6	506	3	8	103	4	2
24. Paola	71	2	0	5	2	2	6	5	2	0	0	0
25. Qormi	2,765	4	3	114	0	0	250	3	8	4	3	5
26. Qrendi	1,023	0	4	72	4	3	270	1	1	19	4	3
27. Rabat	3,102	4	2	776	5	4	513	4	2	59	5	5
28. Safi	455	4	5	59	4	1	264	1	6	8	4	2
29. St Julian's	971	5	2	174	2	1	179	3	6	29	0	0
30. St Paul's Bay	3,040	3	3	562	1	8	675	5	4	96	2	3
31. Sta Vennera	359	5	5	21	4	6	65	2	8	1	0	2
32. Siġġiewi	5,089	0	7	1,103	0	1	1,126	3	6	66	1	5
33. Sliema/Valletta	33	3	2	6	0	5	19	0	6	10	0	3
34. Tarxien	1,330	4	7	34	2	3	180	4	5	0	2	2
35. Żabbar	3,614	2	7	213	2	8	773	1	5	19	5	3
36. Żebbuġ	4,178	2	5	72	0	4	827	0	6	21	5	5
37. Żejtun	4,355	0	8	260	3	8	636	3	2	45	5	1
38. Żurrieq	2,600	3	8	384	2	9	641	4	5	62	1	7
Total	60,716	1	4	8,383	0	5	11,606	3	3	1,318	1	4